# Chapter 20 – Ergonomics

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20.1 Foreword
Cal/OSHA requires every employer subject to California's Ergonomics Standard, to establish and implement a program to prevent or minimize work-related repetitive motion injuries. By having an effective Ergonomics Program, the County will not only be meeting the requirements of the law, but it will be protecting its employees from the health risks associated with repetitive motion. Refer to Appendix A for the California Ergonomics Standard.

20.2 Introduction
Ergonomics defines how people interact with their equipment, tools, and work environments to perform tasks. With the rise in automation, workers are more often called upon to perform repetitive movements within a work environment improperly designed to accommodate the body's limitations. When the body's limits are exceeded repeatedly, a repetitive motion injury (RMI) can occur. Such injuries have plagued dancers and musicians for ages, but automation has resulted in a dramatic increase in the number of work-related repetitive motion injuries. Work-related repetitive motion injuries are becoming increasingly more commonplace among the County workforce as well.

The County is committed to implementing a program to prevent or minimize the incidence of RMIs among its employees. The principle method in this effort is the application of ergonomic principles throughout County workplaces. Applying the principles of ergonomics, by designing work activities and equipment to fit the worker, results in lower incidence of repetitive motion injuries and higher employee morale. The effective application of ergonomics is a winning formula for the County and its employees.

This Ergonomics Program is part of the County's Occupational Injury and Illness Prevention Program, and is in conformance with both the goals of the County's Safety Policy and the requirements of the California Ergonomics Standard.

20.3 Regulatory Requirements
California's Ergonomics Standard requires implementation of a program designed to minimize RMI's. Regulatory requirements are triggered when two or more employees at a worksite, performing identical work activity, are objectively diagnosed (by a licensed physician) with a predominantly work-related RMI within twelve months of each other. The program must include each of the following:

- Worksite evaluations of a representative number of worksites;
- Control of exposures that have caused RMI's and
- Employee training.

20.4 The Program
The County has developed and implemented this Ergonomics Program to prevent or minimize the incidence of repetitive motion injuries among its employees. The Ergonomics Program contained in the remainder of this document consists of the following:

- Definition, causes and symptoms of RMIs;
- Workplace evaluation, job analysis and control measures;
- Employee training requirements;
- Treatment of RMIs;
- Recordkeeping; and
- Roles and responsibilities for implementing the County's Ergonomics Program.

This chapter provides the information necessary to effectively recognize, evaluate and control ergonomic factors in the workplace, and addresses details related to implementation of the County's Ergonomics Program.

Additionally, supervisors and employees will find work site evaluation checklists and surveys for the various work environments encountered throughout the County, and other resources and publications listed in the Appendices to assist in implementation of this Program.

20.5 Roles and Responsibilities

20.5.1 Agency/Department Heads

Department Heads are ultimately responsible for the implementation of this Program, ensuring that their agency or department provides and maintains tools, equipment and furniture that minimize or prevent ergonomic hazards. Department heads provide direction and support to supervisors, department Safety Professionals and/or Safety Coordinators assigned the task of implementing the elements of this Program.

Department Heads should review the OSHA 200 Log, the Annual Injury Report from Workers' Compensation and the OSEC Annual Report to identify any job activities at their work sites; that are associated with RMIs. They should make these reports available for review by supervisors, department Safety Professionals and/or Safety Coordinators in their departments, and should follow up to ensure implementation of appropriate control measures and training where necessary.

20.5.2 Departmental Safety Professionals and Safety Coordinators

Departmental Safety Professionals and Safety Coordinators will help supervisors coordinate workplace evaluations, job analyses and training programs as necessary to implement this Program. They are also responsible for assisting supervisors in evaluating program effectiveness.

Department Safety Professionals and Safety Coordinators are responsible for maintaining and posting the OSHA 200 Log, and for submitting departmental safety data for inclusion in the OSEC Annual Report.

20.5.3 First-line Supervisors

First-line supervisors are responsible for ensuring that employees are provided with ergonomically correct tools and equipment, and are responsible for training new and existing employees in the correct use and maintenance of those tools and equipment.

Supervisors are responsible for performing, or arranging for, workplace evaluations and job analyses when required by this Program.

Supervisors are responsible for implementing the most feasible control measures when an ergonomic risk has been identified through the workplace evaluation, and are responsible for delivering or arranging for ergonomics training for affected employees within their departments.
It is the responsibility of first-line supervisors to follow up on reports of work-related ergonomic injury, ensuring that the injured employee is examined as soon as possible by a qualified medical professional. If a diagnosis is confirmed, the medical professional can help the employee and the supervisor take measures to promote recovery and prevent future injury.

Supervisors must complete the Supervisor's First Report of Industrial Injury/Illness form within twenty-four hours of knowledge of a repetitive motion injury. Supervisors must provide the injured employee with an Employees' Claim for Workers' Compensation Benefits form.

### 20.5.4 Employees

Employees are responsible for using tools and equipment correctly and in the manner established by the supervisor and the manufacturer (and the consulting physician or physical/occupational therapist, if applicable).

Employee involvement is critical to the identification of ergonomic hazards. Early identification and treatment can keep a minor irritation from developing into a serious injury.

Employees should immediately report ergonomic problems or RMI symptoms to their supervisor.

Employees who report a work-related repetitive motion injury to their supervisor should obtain an Employees' Claim for Workers' Compensation Benefits form from their supervisor. The employee should complete and retain a copy of this form, and forward the other copies to the departments indicated at the bottom of the form.

Employees are responsible for participating in ergonomics training. Once trained, employees are responsible for taking preventive measures, such as using tools, equipment and furniture properly, maintaining good posture, taking breaks and using care in performance of their work activities.

### 20.5.5 Safety Committees

Safety committees should periodically review this Program and discuss possible ergonomic risks and solutions for their workplaces.

### 20.5.6 Occupational Safety and Environmental Compliance (OSEC)

OSEC will provide periodic ergonomics training to Department Safety Professionals and Safety Coordinators through the bimonthly Safety Coordinator Forums.

OSEC will continue to analyze ergonomic-related injury rates and costs, observe work practices, and conduct occupational safety audits. Based on these evaluations, and to incorporate any new developments in the field of ergonomics, OSEC will update this Ergonomics Program periodically.

### 20.5.7 The County's Employee Wellness Program

The County's Employee Wellness Program will act as a resource to supervisors, Safety Professionals and Safety Coordinators interested in taking a proactive approach to workplace ergonomics and injury prevention through training, exercise and conditioning.
20.5.8 Valley Therapy Services (For Valley Medical Center Employees Only)

Services provided by Valley Therapy Services personnel are specifically geared toward the prevention and treatment of ergonomic-related injuries. These services are available, at a cost, to County departments and include:

- Workplace Evaluation – Employees are evaluated individually or as a group to determine if they are at risk from a particular job.
- Acute Care - Diagnosis and treatment of repetitive motion injuries.
- Individual Job/Task Evaluation - These evaluations can range from a brief survey to a detailed systematic assessment.
- Functional Capacity Evaluation - Employees' physical capacities and limitations are measured as they pertain to selected work demands.
- Work Hardening - An individualized treatment program designed to maximize the individual's ability to return to work.

20.5.9 US Health Works (for All County Employees, Except VMC Employees)

US Health Works, the County's Occupational Medicine contractor, provides, at a cost to the referring Department, prevention services and treatment of work-related repetitive motion injuries. These services are available to County employees and departments, and include those elements listed under Valley Therapy Services. To arrange an appointment for services, contact the US HealthWorks Physical Therapy department at (408) 720-7022.

20.5.10 Purchasing Department

The County's Purchasing Department is responsible for managing contracts for services with a variety of furniture and equipment vendors, and is available to assist supervisors in source selection for special furniture needs.

20.6 Definition of Repetitive Motion Injuries

Repetitive motion injuries (RMIs) are defined as a group of illnesses associated with ongoing damage to soft tissues. Problems such as these may also be referred to as cumulative trauma disorders, repetitive strain injuries, repetitive trauma disorders or musculoskeletal disorders.

A repetitive motion injury is any disorder of the muscles, nerves, tendons, ligaments, joints, cartilage or spinal disks, affecting the head, shoulders, neck, back, arms, hands, or fingers, which has a gradual or chronic development. Examples include bursitis, ligament sprains, muscle strains, nerve entrapment (carpal tunnel syndrome), stenosing tenosynovitis (trigger finger), tendon related disorders (de Quervain's), and hand-arm vibration syndrome.

For purposes of this Program, a repetitive motion injury must be predominantly caused (50% or more) by a work-related job, process or operation, and must be objectively diagnosed by a licensed physician. The definition of a licensed physician does not include chiropractors, and therefore a RMI diagnosis made by a chiropractor does not satisfy the conditions of this Program.
20.7 Causes of Repetitive Motion Injuries

The common causes of repetitive motion injuries are listed below. It is usually a combination of these factors that cause injury.

**Force**

The more force a certain repetitive motion requires, the greater the risk of injury. This can apply to a range of forces - from the force required to lift a sack of cement to the force required to depress a computer key.

**Frequency**

The more often a motion is repeated, the greater the risk of injury. This is especially true of extremely rapid motions such as keystroking.

**Position**

Awkward positions put more stress on nerves, muscles and tendons. This can involve everything from a twisted wrist motion to a full-body reach.

**Duration**

The length of time an awkward position is held and a particular task is repeated can affect whether or not an injury occurs.

**Rest or Pause**

Certain motions require periodic pauses for the body's tendons to restore their natural lubricants. It is often the most dedicated employees, the ones who skip their rest breaks, that fall victim to repetitive motion injuries.

**Vibration**

Exposure to localized (segmental) or whole-body vibration can cause musculoskeletal and back problems, osteoarthritis, and decalcification in the small bones of the hand.

**Individual Variation**

Some individuals may be more prone to certain types of repetitive motion injuries. One employee may perform a certain task for years without injury, while another employee may be injured in a matter of weeks by performing the same task. Ergonomic solutions must address individual needs.

**Off-the-Job Factors**

Employees who perform repetitive tasks at work are at greater risk of injury if they perform similar tasks at home. Hobbies like computing, knitting, crocheting, building and gardening are some examples of home activities that can cause or aggravate RMIs. Employees who adopt poor postures both at work and at home are also at increased risk. Employees who stay physically fit through stretching, exercise and proper nutrition reduce their risk of injury.

20.8 Symptoms of Repetitive Motion Injuries

If an employee experiences any of the following, it may indicate the beginnings of a repetitive motion injury:
- Pain from exertion, pressure, or exposure to cold or vibration, except when the pain is due to an acute injury such as a bump, abrasion, splinter, slip and fall;

- Numbness or tingling in an arm or leg, or digit; or numbness that awakens you from sleep;

- Decreased range of joint motion;

- Decreased grip strength;

- Swelling of a joint or part of an arm, leg, or

- Symptoms that persist into the next workday (fatigue can be an early sign but is not a disorder and resolves overnight).

Although the awareness of ergonomics has increased dramatically in recent years, many people still think that work-related repetitive motion injuries are just a sign of "growing old" or "not being in shape." Because repetitive motion injuries happen gradually, many people tend to ignore early symptoms or not consider all possible causes.

Prompt medical attention should be sought if symptoms persist, as early intervention is the key to a quick and complete recovery.

**20.9 Workplace Evaluation**

Due to the long recovery time and potential permanent damage associated with many repetitive motion injuries, prevention is the key to protecting employees, maintaining productivity and keeping Workers' Compensation costs down.

A thorough workplace evaluation is essential in identifying risk factors that may be responsible for contributing to the incidence of RMIs. Even in the absence of diagnosed RMIs, each workplace suspected of ergonomic risk should be evaluated for its potential to cause injury. A workplace evaluation typically consists of identifying common warning signs, interviewing employees, reviewing and documenting workstation set-up, and determining how the workspace influences employee work activities and tasks.

**20.9.1 Warning Signs**

The first line of defense in preventing or responding to the onset of a repetitive motion injury is identifying common warning signs. Supervisors should consider the following as signs of potential or present ergonomic risks:

- Employee reports symptoms typical of a repetitive motion injury;

- Routine inspection identifies an ergonomic risk;

- Job, process or operation changes;

- New equipment or tools are used;

- OSHA Injury and Illness Log (300 log) indicates repetitive motion injuries;
• Workers' Compensation data shows RMI-related claims; or

• Information indicates that the most recent ergonomic evaluation may be deficient.

### 20.9.2 Employee Interview

Because some employees may be reluctant to bring a problem to the attention of their supervisor, it is important that supervisors actively ask employees to report pain or discomfort related to tasks, tools, equipment, or furniture. Supervisors should be particularly alert to employees who describe symptoms of soreness, numbness, or weakness of the fingers, hands, wrists, joints, or muscles.

Supervisors should be aware that since each employee is different and some may be more prone to repetitive motion injuries than others, it is particularly important to follow up on an employee's complaint of discomfort or pain.

### 20.9.3 Workspace, Personnel and Tasks

In determining the adequacy of workspaces, supervisors should take into consideration the physical makeup of the workers, the specific body parts involved in the particular tasks, and whether the workstation features are fixed or adjustable.

According to recent scientific literature, the following are important risk factors leading to RMIs:

- **Awkward Postures** - Worker must frequently slouch, bend, twist, or reach too far to perform tasks. Worker assumes awkward or uncomfortable postures.

- **Forceful Exertions** - Worker must frequently grip, pull, push, or lift heavy items, or the force required to perform the task is substantial.

- **Static Exertions** - Workers must perform static exertions, which require use of significant force by the body, but do not result in significant movement of the body. Awkward postures are often associated with prolonged static exertions.

- **Diversions** - Worker must deviate or change from natural posture or position to accommodate process or work space feature.

- **Repetitive Motions** - The motion, exertion or diversion is repeated frequently.

- **Duration** - The interval between motions or exertions, or between periods of repetitive activity, is inadequate and parts of the body become fatigued.

- **Contact Stresses** - Worker must lean or press against a hard surface or sharp edge, or against a hard surface or sharp edge, or workers are exposed to pressure being applied to a specific body part or tissue.

- **Vibration** - Vibration is present while performing repetitive activity, or worker uses vibrating tools or equipment.

- **Temperature** - Work involves extremely cold temperatures. Worker is simultaneously exposed to cold and vibration or repetitive activity.

- **Pace** - Work is performed at a pace that results in worker fatigue.
- **Familiarity** - Worker unfamiliar with most efficient and safe process, operation, or use of equipment or tool.

It is important that each risk factor be evaluated independently to ascertain which are the most hazardous and how each can be reduced. Once done, individual risk factors should then be evaluated in relation to any other risk factors present, keeping in mind that two risks are greater than one.

Documentation of all workplace evaluations including the date, the location or worksite, the job and task descriptions, the evaluator's name, the risk factors identified, and recommendations for corrective action should be maintained on site.

The workplace evaluation forms found in Appendix B, have been designed to address specific tasks, processes or operations encountered in a variety of workplaces throughout the County, and should be used to perform these evaluations.

### 20.10 Job Analysis

In the event a repetitive motion injury is diagnosed for two or more employees at a worksite, who perform an identical work activity, a job analysis of a representative number of worksites is mandated by California's Ergonomics Standard.

A job analysis entails breaking the job into its various elements or actions, describing each element, measuring and quantifying each of the risk factors inherent in the element, and identifying conditions which may contribute to these risk factors. Upon completion of the job analysis, measures must be implemented to control the exposures that have been determined to cause the repetitive motion injuries.

The job analysis involves identification of job tasks, which can be described in terms of (1) the tools, equipment, and materials used, (2) the workstation layout, and physical environment, and (3) the physical task demands of the job. The job analysis typically includes the elements of a thorough workplace evaluation and some or all of the following additional elements:

- Observing the worker performing each job task, to determine time-activity and to collect task-cycle data;
- Photographing work postures, workstation layout, tools and equipment;
- Measuring the distance of workplace tools or equipment in relation to the worker;
- Measuring and weighing tools and parts, and measuring tool vibration;
- Determining slip resistance, hardness of work surfaces, or sharpness of edges on work surfaces;
- Measuring exposures to heat, cold and vibration;
- Performing calculations to measure muscle force or spinal pressure required to accomplish work tasks;
- Measuring oxygen consumption and heart rate during the job, process or operation; and
- Conducting employee interviews and subjective rating surveys to determine perceived risk factors.

Persons with considerable experience in the field of ergonomics typically perform these job analyses.
However, the supervisor, during the workplace evaluation, can perform many of the necessary observations and inquiries that will be useful to the ergonomist in conducting the comprehensive job analysis. A copy of all workplace evaluation documentation should be provided to the ergonomist.

### 20.11 Control Measures

Once an ergonomic risk has been identified, it must be evaluated for application of the most feasible control measure. Control measures include engineering controls such as workstation modification, tool redesign, or fixture adjustment, and administrative controls such as task design, job rotation, work pacing or work breaks. The goal of implementing control measures is ultimately to prevent the onset of RMIs or, at a minimum, to reduce the symptoms associated with RMIs. These measures should be implemented as soon as practicable.

Supervisors should consult their departments Safety Coordinator if they suspect professional expertise may be needed.

The following are some control measures supervisors should consider for use in preventing the onset of, or alleviating the symptoms associated with RMIs among their employees.

#### 20.11.1 Workstation Design

A workstation should accommodate the individual who actually does the job; it is not enough to provide for the "average" or "typical" worker. Supervisors are encouraged to consult with their employees regarding equipment and furniture, and should give employees some discretion about the type of equipment or workstation design that best suits them and their tasks. For instance, in an office environment, an adjustable keyboard tray, an adjustable monitor holder, and an adjustable chair and footrest can go a long way in helping prevent RMIs and in making the workplace more comfortable and efficient. See Appendix E - Ergonomic Resources, for furniture vendor information.

If several employees use a workstation during different shifts, it must be easily and quickly adjustable to fit each of the individual employees.

Workstation and equipment modifications don't always require expensive purchases. In fact, old telephone books can be used to raise the height of computer monitors, and can also be used as footrests. Inexpensive lumbar pillows can be used to adjust the depth of office chair seat-pans, and pipe insulation can be used for padding on pens and pencils. These are just a few examples of readily available, low-cost ergonomic solutions.

The costs of preventing a repetitive motion injury, through proper workstation design, are often far less than the costs of treating a repetitive motion injury.

See Appendix C for information on proper computer workstation set-up.

#### 20.11.2 Task Design

Tasks can be modified to reduce the risk factors associated with RMIs as follows:

- Reduce the frequency of repetition. Reduce the number of times per second, minute, or hour a motion is repeated;
- Reduce the total duration of the activity;
• Use different tasks or short breaks to interrupt periods of repeated activity. Introduce variety into the work routine. Variety usually results in greater interest and increased productivity;

• Reduce the amount of force needed to perform the work;

• Change the body position necessary to perform the activity. Look for ways to improve the positioning of employees when performing work tasks. Reduce the extent to which employees have to reach, stretch, or bend to perform a job task; and

• Reduce the time an employee must spend performing work in awkward or uncomfortable positions or postures.

If light duty or restricted work activity is implemented, make sure that the modified tasks actually reduce the risk factors.

20.11.3 Tools and Equipment

The use of a well-designed or fitted tool or piece of equipment can prevent many ergonomic injuries. Both industrial tools and office tools are often available in a variety of sizes to achieve a proper fit and reduce ergonomic risk. Selection and use of the right tool for the job can aid in eliminating or minimizing the following stresses:

• Chronic muscle contraction or steady force;

• Extreme or awkward positions;

• Repetitive forceful motions;

• Vibration; and

• Excessive gripping, pinching, pounding or pressing with the hand or fingers.

In some cases, replacement of existing tools or equipment may be necessary to eliminate an ergonomic hazard. But, when permanent solutions are not immediately possible, the use of temporary measures is advisable.

Employees are encouraged to inform their supervisors of the availability of new or improved equipment.

20.11.4 Employee Conditioning

Some tasks require conditioning or break-in may last several weeks. Division managers should review injury statistics and job functions to identify jobs, which may require such conditioning. New or returning employees who are not in shape for the demands of the job should be gradually integrated into work and be given guidance and feedback during the break-in period.

20.11.5 Warm-up Exercise Programs

Just as athletes must stretch and warm up before performing, departments experiencing ergonomic problems may want to consider implementing a program where employees in certain job classifications perform a series of brief "warm-up" exercises, either before starting work or prior to performing certain tasks.

The County's Employee Wellness Program is an excellent resource for information and training related to exercise and conditioning. Refer to Appendix E for information relative to this resource.
20.11.6 Work Practices
Supervisors should review with their employees the control measures implemented at the worksite to prevent RMIs. Workstation designs and task modifications should be thoroughly explained to employees, and appropriate training provided. Once trained, employees are responsible for protecting themselves by implementing the following work practices:

- Adjust furniture to attain a correct fit;
- Maintain good posture;
- Move phones and other often-used pieces of equipment close to the center of the work area;
- Use a "light touch" when performing potentially injurious motions such as writing, typing, stapling and stamping;
- Use proper lifting techniques;
- Use proper tools and equipment and maintain them in a safe condition;
- Use ergonomically designed workstations, fixtures and furniture correctly.

20.12 Training and Education
Employees who are well informed about the ergonomic hazards to which they may be exposed are able to participate actively in their own protection. Training allows managers, supervisors, and employees to understand ergonomic hazards, their prevention and control, and their medical consequences. The content of the training may be expanded to reflect job-specific information.

New employees and reassigned employees should receive an initial orientation and hands-on training prior to their being placed in a job. Training should include a demonstration of the proper use of all tools and equipment, and information about how to prevent repetitive motion injuries.

In departments where ergonomic hazards have been identified, and work-related RMIs have been diagnosed in two or more employees performing identical work activities, in the past twelve months, supervisors must ensure that employees are provided with training that includes an explanation of:

- An overview of the County's Ergonomics Program;
- Exposures associated with repetitive motion injuries;
- Symptoms and consequences of repetitive motion injuries;
- The importance of reporting symptoms and injuries to the supervisor;
- Job-specific ergonomic hazards, which cause repetitive motion injuries; and
- Methods used by the department to minimize repetitive motion injuries.

Supervisors should consult their Department's Safety Professional or Safety Coordinator to assist in arranging for training.
Supervisors interested in taking a proactive approach to ergonomics training and injury prevention should contact the County's Employee Wellness Program. They provide an excellent resource for information, training, exercise and conditioning as a means to RMI prevention.

A record of training must be maintained on site. This record should include the date the training was provided, a list of all attendees (including signatures), an outline of the training, and a list of training materials or handouts utilized. See Appendix D, for a sample Record of Ergonomics Training.

20.13 Treatment of Work-Related Repetitive Motion Injuries

When every effort at prevention fails, and RMI symptoms do occur, medical help should be sought early. Most repetitive motion injuries will heal, given time and proper medical treatment. Treatments include rest, medication, and therapy. In advanced cases, a physician may recommend surgery.

In addition to seeking medical attention, employees should immediately report RMI symptoms to their supervisors.

Since most repetitive motion injuries begin with mild symptoms, early diagnosis and treatment can prevent more serious injury.

Although an employee may be hesitant to report or see a doctor for such a "little thing," it is important that they report and seek medical advice for RMI symptoms as soon as possible.

20.14 Recordkeeping

Records of work-related RMIs can help in monitoring the success of the County's Ergonomics Program, and are the primary source of information to indicate that regulatory requirements have been triggered.


The Supervisor's First Report of Industrial Injury/Illness form must be completed within twenty-four hours of knowledge of a repetitive motion injury. Supervisors completing the form should provide as thorough a description of the incident as possible, and should clearly indicate if they believe the injury is ergonomically related.

Each RMI incident should be reviewed for evidence of ergonomic risks and followed by implementation of appropriate within the workplace, control measures if necessary.

Copies of the Supervisor's First Report of Industrial Injury/Illness form must be distributed to the departments or individuals listed at the bottom of the form.

Supervisors should refer employees with work related RMIs to US HealthWorks, the County's Workers' Compensation primary care provider, for diagnosis and treatment. Employees wishing to utilize their personal physician must have a Physician Designation Form indicating the name and location of their physician, on file with County Personnel prior to the onset of the injury.

20.14.2 Employee's Claim for Workers' Compensation Benefits

The supervisor is responsible for providing the affected employee with an Employees' Claim for Workers' Compensation Benefits form. The employee should retain a copy of this form, and forward the other copies to the departments indicated at the bottom of the form.
20.14.3 CAL/OSHA Log and Summary of Occupational Injuries and Illnesses

The OSHA 300 Log is a good source of information concerning workplace injuries and illnesses, and can be used as a quick reference to determine the existence of RMI trends associated with certain work activities or occupations.

OSHA 300 Logs are maintained by department Safety Professionals or Safety Coordinators on an ongoing basis, and should be reviewed periodically by supervisors. When trends are identified, supervisors should ensure that workplace evaluations are conducted and appropriate control measures are implemented.

20.14.4 Annual Injury Reports

The Risk Management Department provides Agency and Department heads with Annual Injury Reports describing injury trends, injury rates, lost time, injury types, and costs of injuries for their departments. These records can provide critical information relating to the occurrence of RMIs, and should be made available to supervisors for their review.

20.14.5 OSEC Annual Report

Occupational Safety and Environmental Compliance (OSEC) uses injury data from Workers' Compensation and various statistics from Safety Coordinators to monitor compliance with the requirements of the Ergonomics Standard, and to measure the County's progress in RMI minimization and prevention. From this data, OSEC prepares an Annual Report that includes a review of injury trends and regulatory compliance initiatives related to, among other topics, workplace ergonomics and RMIs.

20.14.6 Workplace Evaluations and Job Analyses

Supervisors are responsible for documenting all workplace evaluations and job analyses, and, maintaining these records on site for a period of three years. These documents should also include detailed information relative to ergonomic control measures implemented at the worksite.

20.14.7 Record of Ergonomics Training

All records of training, whether conducted by the supervisor, the department Safety Professional or Safety Coordinator, a professional ergonomist, or other qualified personnel must be maintained by the supervisor at the worksite for a minimum of three years. See Appendix D for a sample Record of Ergonomics Training.

20.15 Applicable Regulations

CAL/OSHA, Title 8, CALIFORNIA CODE OF REGULATIONS, Section 5110

20.16 Appendices
§5110. Repetitive Motion Injuries.

(a) Scope and application. This section shall apply to a job, process, operation where a repetitive motion injury (RMI) has occurred to more than one employee under the following conditions:

   (1) Work related causation. The repetitive motion injuries (RMIs) were predominantly caused (i.e. 50% or more) by a repetitive job, process, or operation;

   (2) Relationship between RMIs at the workplace. The employees incurring the RMIs were performing a job process, or operation of identical work activity. Identical work activity means that the employees were performing the same repetitive motion task, such as but not limited to word processing, assembly or, loading;

   (3) Medical requirements. The RMIs were musculoskeletal injuries that a licensed physician objectively identified and diagnosed; and

   (4) Time requirements. The RMIs were reported by the employees to the employer in the last 12 months but not before July 3, 1997.

(b) Program designed to minimize RMIs. Every employer subject to this section shall establish and implement a program designed to minimize RMIs. The program shall include a worksite evaluation, control of exposures which have caused RMIs and training of employees.

   (1) Worksite evaluation. Each job, process, or operation of identical work activity covered by this section or a representative number of such jobs, processes, or operations of identical work activities shall be evaluated for exposures which have caused RMIs.

   (2) Control of exposures which have caused RMIs. Any exposures that have caused RMIs shall, in a timely manner, be corrected or if not capable of being corrected have the exposures minimized to the extent feasible. The employer shall consider engineering controls, such as work station redesign, adjustable fixtures or tool redesign, and administrative controls, such as job rotation, work pacing or work breaks.

   (3) Training. Employees shall be provided training that includes an explanation of:

      (A) The employer's program;
      (B) The exposures which have been associated with RMIs;
      (C) The symptoms and consequences of injuries caused by repetitive motion;
      (D) The importance of reporting symptoms and injuries to the employer; and
      (E) Methods used by the employer to minimize RMIs.

(c) Satisfaction of an employer's obligation. Measures implemented by an employer under subsection (b)(1), (b)(2), or (b)(3) shall satisfy the employer's obligations under that respective subsection, unless it is shown that a measure known to but not taken by the employer is substantially certain to cause a greater reduction in such injuries and that this alternative measure would not impose additional unreasonable costs.

20.16.2 Appendix B-1: General Workplace Evaluation Checklist

Use the checklist below to evaluate general ergonomic risks at your work site. Check the box if your answer is "yes" to the question. A "yes" response indicates that an ergonomic risk factor may be present and should be followed up with further evaluation, task modification and workstation adjustment if necessary.

Note that while workplace evaluations are useful tools in identifying possible ergonomic risks, not all individual risk factors need be eliminated in order to reduce the risk of RMIs. Often, only slight modifications of work practices or equipment will be sufficient to reduce or eliminate RMIs. Very rarely will all risk factors require modification or elimination to achieve significant reduction in RMIs.

Refer to the indicated Workplace Evaluation Checklists to follow up on any checked items. Use the Workplace Evaluation Coversheet found in Appendix B-2, to document the workplace specifics of this evaluation.

Musculoskeletal Demands

- Do the tasks require frequent, repetitive or monotonous motions?
- Do work postures require frequent contortion of the neck, shoulder, elbow, wrist or finger joints?
- Are workers required to sit continuously for more than 30 minutes, without the opportunity to stand?
- Are workers required to stand continuously for more than 30 minutes, without the opportunity to sit?
- For seated work, is reach distance in excess of 15 inches from the worker's position?
- Is the worker unable to change position often?
- Does the work involve shock or rapid buildup of forces?
- Is finger-pinch gripping used?
- Do job postures involve sustained muscle contraction of any limb?

For further evaluation, refer to Appendix B-4, Computer Workstation Evaluation Checklist; Appendix B-5, Task Evaluation Checklist; and Appendix B-6, Hand Tool Evaluation Checklist.

Computer Workstation

- Do operators use computer workstations for more than 4 hours a day?
- Do employees use input devices (i.e. mouse, keyboard) continuously for more than 30 minutes?
- Are there complaints of discomfort from those working at these stations?
- Is the chair or desk nonadjustable?
- Is the display monitor, keyboard or document holder nonadjustable?
- Does lighting cause glare or make the display monitor hard to read?
- Is the room too hot or too cold?
- Is there irritating vibration or noise?

For further evaluation, refer to Appendix B-4, Computer Workstation Evaluation Checklist.
20.16.2 Appendix B-1: General Workplace Evaluation Checklist

Manual Material Handling

☐ Is there lifting or lowering of loads, tools or parts that cannot be held close to the body?

☐ Is there lifting or lowering of loads, tools or parts in excess of 50 lbs?

☐ Is there overhead reaching for loads, tools or parts?

☐ Is there bending at the waist to handle loads, tools or parts?

☐ Is there twisting to handle loads, tools or parts?

For further evaluation, refer to Appendix B-7, Materials Handling Evaluation Checklist.

Physical Energy Demand

☐ Do tools or parts weigh more than 10 lbs. (1 gallon of water weighs ~8 lbs.)?

☐ Is reach distance greater than 20 inches?

☐ Is bending, kneeling, stooping or squatting a primary task activity?

☐ Is lifting or lowering loads a primary task activity?

☐ Is walking or carrying loads a primary task activity?

☐ Is stair or ladder climbing with loads a primary task activity?

☐ Is pushing or pulling loads a primary task activity?

☐ Is reaching overhead a primary task activity?

☐ Do any of the above tasks require five or more complete work cycles to be done within a minute?

☐ Do workers complain that rest breaks and fatigue allowances are insufficient?

For further evaluation, refer to Appendix B-7, Materials Handling Evaluation Checklist.

Tools

☐ Is the handle too large or too small?

☐ Does the handle shape cause the operator to bend the wrist in order to use the tool?

☐ Is the tool difficult to access?

☐ Does the tool weigh more than 9 lbs. (1 gallon of water weighs -8 lbs.)?
Does the tool vibrate excessively?

Does the tool cause excessive kickback to the operator?

Does the tool become too hot or cold?

For further evaluation, refer to Appendix B-6, Hand Tool Evaluation Checklist.
20.16.2 Appendix B-2: Workplace Evaluation Coversheet

WORK SITE/LOCATION (ATTACH FLOORPLAN OR SCHEMATIC DRAWING):
_________________________________________________________________________________

EVALUATED BY:___________________________________________ DATE:________________

DEPARTMENT SUPERVISOR:___________________________ TELEPHONE:_________________

TOTAL NO. OF WORKSTATIONS/TASKS/TOOLS EVALUATED:________________________

TYPES OF EQUIPMENT OR TOOLS USED:___________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

TYPES OF TASKS PERFORMED:____________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

TYPICAL HOURS AND WORK CONDITIONS:_________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

RECOMMENDED MODIFICATIONS OR CORRECTIVE ACTIONS:
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
20.16.2 Appendix B-3: Workplace Evaluation Checklist

In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2, to document the workplace specifics of this evaluation.

WORKSTATION EQUIPMENT SET-UP

No responses indicate potential ergonomic problem areas and should be followed up with engineering or administrative control measures. Indicate if an adjustment is made by the evaluator, and indicate the type of adjustment in the comments section at the bottom of this form. In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2, to document the workplace specifics of this evaluation.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Adjusted</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the work space allow for full range of motion?</td>
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<tr>
<td>2. Is the height of the work surface adjustable?</td>
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<tr>
<td>3. Can the work surface be tilted or angled?</td>
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<tr>
<td>4. Is the workstation designed to eliminate:</td>
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<td></td>
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<tr>
<td>bending or twisting at the wrist?</td>
<td></td>
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<tr>
<td>reaching above the shoulder?</td>
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<td></td>
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<tr>
<td>static muscle exertion?</td>
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<tr>
<td>full extension of the arm?</td>
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<td></td>
<td></td>
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<tr>
<td>raised elbows?</td>
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<tr>
<td>5. Is the worker able to vary position and posture?</td>
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<tr>
<td>6. Are there sharp edges where hands or arms are rested on work surfaces?</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>7. Are armrests provided where needed?</td>
<td></td>
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<tr>
<td>8. Is a footrest provided when needed?</td>
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<tr>
<td>9. Is the floor free of obstacles?</td>
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<tr>
<td>10. Are work surfaces free of clutter?</td>
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<td></td>
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<tr>
<td>11. Are cushioned floor mats provided for employees required to stand for long periods of time?</td>
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<tr>
<td>12. Are chairs or stools easily adjustable and suited to the task?</td>
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<td></td>
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<tr>
<td>13. Are all task tools and equipment visible and reachable from comfortable positions?</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14. Is there a preventive maintenance program for tools and equipment?</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
20.16.2 Appendix B-4: Computer Workstation Evaluation Checklist

The first step to a successful ergonomics program is supervisors and their employees to evaluate the work and the workstation. What follows is a "VDT Checklist" to help you make a quick but thorough appraisal of your VDT workstations. Answer each of the Checklist questions for each VDT operator and their workstations. A "yes" answer means you are in good shape. A "no" answer means that you should take a closer look. In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2, to document the workplace specifics of this evaluation.

## VDT CHECKLIST

<table>
<thead>
<tr>
<th>VDT OPERATORS</th>
<th>Yes</th>
<th>Adjusted</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. VDT operators have been encouraged to report to management any physical problems that they associate with the use of their VDT workstation.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. VDT operators do not have physical problems that they associate with the use of their VDT workstation.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

## LIGHTING AND GLARE

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Adjusted</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. VDT workstation is arranged to minimize glare and visual discomfort.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. VDT screen is clean and free of perceptible flicker.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

## WORKSTATION SEATING

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Adjusted</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. The seat and backrest of the chair support comfortable postures permitting occasional variation in the seating.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Seat height allows the operator to comfortably place the entire sole of the foot flat on the floor or flat on a footrest.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Seat pan does not push against the back of the lower leg behind the knee.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. The seat pan angle allows the operator to assume a comfortable position with the thighs approximately parallel to the floor and the lower leg approximately perpendicular to the floor.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. The angle between the seat back and the seat pan allows the operator to assume a comfortable upright position with the torso approximately perpendicular to the floor.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. The seat back width is at least 12 inches.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
10. The seat back allows the operator to assume a comfortable position with ample support for the lower back.

11. Arm rests, if present, allow the operator to assume a comfortable position and to:
   (a) relax the shoulders and arms in a position close to the body;
   (b) operate the keyboard with the home row at approximately elbow height and the hands, wrists and forearms in a straight line approximately parallel to the floor;
   (c) move as close as desired to the keyboard;
   (d) easily reach primary work materials and accessories

12. Arm rests, if present, have a minimum inside distance between them which is at least equal to the width of the hips of the operator.

13. Adjustable seat pans, seat backs, and arm rests, if present, are readily operable by the operator without the use of tools.

SCREENS, KEYBOARDS, AND WORK SURFACES

14. The topmost line of the VDT screen is slightly below eye level with the operator in an upright position.

15. The operator while sitting in a comfortable position can perform keying with the torso sitting in an upright position.

16. Operators wearing bifocals or trifocals can look at the screen without tilting the head.

17. The keyboard, seating and work surfaces are positioned so that the operator, while seated in the most comfortable upright position, can perform keying with the keyboard approximately at elbow level, and the forearms, wrists and hands in a straight line approximately parallel to the floor.

18. The operator, while seated in the most comfortable position, can perform keying with relaxed shoulders (i.e., not elevated) and arms resting close to the sides of the body (i.e., not extended outward or stretched forward).

19. The keyboard is positioned (i.e., angled) so that keystroking can be performed with the wrist, hands, knuckles and fingers in a relaxed, natural (neutral) position.

20. The work surface is high enough underneath so that it does no contact the top of the operators legs whenever the operator is sitting at the VDT with the feet flat on the floor or flat on a footrest.
21. The work surface is large enough to hold all needed input devices (e.g., keyboards, mouse, trackball), task materials and related accessories.

22. Input devices are positioned on the work surface at approximately the same height and distance from the operator at the keyboard.

23. Input devices, primary work materials and frequently used accessories are positioned on the work surface in front of the operator.

24. Adjustable screens, keyboards and work surfaces, if present, are readily operable by the user without the use of tools.

WORK PRACTICES

25. VDT operators have frequent short interruptions from keystroking at regular intervals throughout the shift, during which they can perform other duties or otherwise give their hands and wrists a break from keystroking. Even periods as short as 30 seconds are helpful.

26. VDT operators routinely change body positions while working at the VDT.

27. VDT operators routinely perform stretching and movement exercises and provide their eyes with short mini-rest breaks.

28. VDT operators work regular hours without a lot of overtime.

29. VDT operators are normally able to complete daily work and meet deadlines without harmful stress.

VDT ACCESSORIES

30. Document holders are provided upon the operator's request for any employee who types from documents.

31. Document holders are positioned so that reading material is at approximately the same height and at the same distance from the operator as the VDT screen.

32. Wrist rests are provided upon the operator's request.

33. Wrist rests assist the operator in maintaining a straight, neutral position of the wrists and hands while keystroking, and are padded and free of sharp edges.

34. The wrist rest, if present, is
   (a) approximately the same height as the keyboard;
   (b) positioned directly adjacent to the keyboard without gaps;
   (c) allows the operator to avoid resting the arms/wrists or hands on hard, sharp or square edged surfaces. *
35. Footrests are provided as needed to allow the operator to place the entire sole of the foot flat on a stable surface.

36. Telephone headsets are provided upon request for VDT operators who frequently answer telephones as part of their normal work activities.

*NOTE: A "no" response to any single item in (a) through (c) should be recorded as a "no" response should be noted.
20.16.2 Appendix B-5: Task Evaluation Checklist

In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2 to document the workplace specifics of this evaluation.

**TASK DESIGN**

No responses indicate potential ergonomic problem areas and must be followed up with engineering or administrative control measures.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>1. Does the design of the primary task reduce or eliminate:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>bending or twisting of the back or trunk?</td>
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<tr>
<td></td>
<td>crouching?</td>
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<td></td>
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<tr>
<td></td>
<td>bending or twisting the wrist?</td>
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<tr>
<td></td>
<td>extending the arms?</td>
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<td></td>
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<td></td>
<td>raising elbows?</td>
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<tr>
<td></td>
<td>static muscle exertion?</td>
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<td></td>
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<tr>
<td></td>
<td>wringing motions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>finger pinch grip?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are mechanical devices used when necessary?</td>
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<td></td>
<td></td>
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<tr>
<td>3. Can the task be done with either hand?</td>
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<tr>
<td>4. Can the task be done with two hands?</td>
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<tr>
<td>5. Are pushing or pulling forces kept minimal?</td>
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<tr>
<td>6. Are required forces judged acceptable by workers?</td>
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<tr>
<td>7. Are the materials able to be held without slipping?</td>
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<tr>
<td></td>
<td>easy to grasp?</td>
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</tr>
<tr>
<td></td>
<td>free from sharp edges and corners?</td>
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<td></td>
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<tr>
<td>8. Do containers have good handholds?</td>
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<td></td>
<td></td>
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<tr>
<td>9. Are jigs, fixtures, and vises used where needed?</td>
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<td></td>
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<tr>
<td>10. As needed, do gloves fit properly and are they made of proper fabric?</td>
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<tr>
<td>11. As needed, do work shoes provide adequate protection and are they designed to accommodate the type of work performed?</td>
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<tr>
<td>12. Does the worker avoid contact with sharp edges when performing the task?</td>
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<td></td>
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<tr>
<td>13. When needed, are push buttons designed properly?</td>
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<tr>
<td>14. Do the job tasks allow for ready use of personal protective equipment that</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
15. Are ergonomic risk factors reduced or eliminated by:
   - job rotation?  
   - self-pacing?  
   - sufficient pauses?  
   - adjusting the job skill level of the worker?

16. Is the employee trained in:
   - proper work practices?  
   - when and how to make adjustments?  
   - recognizing signs and symptoms of potential problems?
20.16.2 Appendix B-6: Hand Tool Evaluation Checklist

In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2 to this document the workplace specifics of this evaluation.

HANDTOOL USE AND DESIGN

No responses indicate potential ergonomic problem areas and must be followed up with engineering or administrative control measures.

1. Are tools selected to limit or minimize exposure to excessive vibration?  
   use of excessive force?  
   bending or twisting the wrist?  
   finger pinch grip?  
   problems associated with trigger finger?  
   [ ] Yes [ ] No [ ] N/A

2. Are tools powered where necessary or feasible?  
   [ ] Yes [ ] No [ ] N/A

3. Are tools evenly weight balanced?  
   [ ] Yes [ ] No [ ] N/A

4. Are heavy tools suspended or counterbalanced to facilitate use?  
   [ ] Yes [ ] No [ ] N/A

5. Do tools allow adequate visibility of the workplace?  
   [ ] Yes [ ] No [ ] N/A

6. Do tool grips or handles prevent slipping?  
   [ ] Yes [ ] No [ ] N/A

7. Are tools equipped with handles of textured, non-conductive materials?  
   [ ] Yes [ ] No [ ] N/A

8. Are different handle sizes available to fit the range of worker's hand sizes?  
   [ ] Yes [ ] No [ ] N/A

9. Are tool handles designed not to dig into the palm of the hand?  
   [ ] Yes [ ] No [ ] N/A

10. Can the tool be used safely with gloves?  
    [ ] Yes [ ] No [ ] N/A

11. Can the tool be used with either hand?  
    [ ] Yes [ ] No [ ] N/A

12. Is there a preventive maintenance program to keep tools operating as designed?  
    [ ] Yes [ ] No [ ] N/A

13. Have employees been trained:  
    in the proper use of tools?  
    when and how to report problems with tools?  
    in proper tool maintenance?  
    [ ] Yes [ ] No [ ] N/A
## 20.16.2 Appendix B-7 Materials Handling Evaluation Checklist

In addition to this Checklist, use the Workplace Evaluation Coversheet found in Appendix B-2 to document the workplace specifics of this evaluation.

**MATERIALS HANDLING**

No responses indicate potential ergonomic problem areas and must be followed up with engineering or administrative control measures.

1. Are the weight of loads lifted judged acceptable by the workforce? [ ] Yes [ ] No [ ] N/A
2. Are materials moved over minimum distances? [ ] Yes [ ] No [ ] N/A
3. Is the distance between the carried load and the body minimized? [ ] Yes [ ] No [ ] N/A
4. Are walking surfaces level? [ ] Yes [ ] No [ ] N/A
   wide enough? [ ] Yes [ ] No [ ] N/A
   clean, dry and free of obstructions? [ ] Yes [ ] No [ ] N/A
   slip resistant? [ ] Yes [ ] No [ ] N/A
5. Are floor surfaces padded when long-term standing is required? [ ] Yes [ ] No [ ] N/A
6. Are objects to be lifted:
   easy to grasp? [ ] Yes [ ] No [ ] N/A
   stable? [ ] Yes [ ] No [ ] N/A
   able to be held without slipping? [ ] Yes [ ] No [ ] N/A
7. Are there handholds on the objects to be lifted? [ ] Yes [ ] No [ ] N/A
8. When required, do gloves fit properly? [ ] Yes [ ] No [ ] N/A
9. Is the proper footwear worn? [ ] Yes [ ] No [ ] N/A
10. Is there sufficient room to maneuver? [ ] Yes [ ] No [ ] N/A
11. Are mechanical aids used whenever possible? [ ] Yes [ ] No [ ] N/A
12. Are working surfaces adjustable to optimal material handling heights? [ ] Yes [ ] No [ ] N/A
13. Does material handling avoid:
   movements below knee or above shoulder height [ ] Yes [ ] No [ ] N/A
   static muscle exertion? [ ] Yes [ ] No [ ] N/A
   sudden movements during handling? [ ] Yes [ ] No [ ] N/A
   twisting at the waist? [ ] Yes [ ] No [ ] N/A
   extended reach? [ ] Yes [ ] No [ ] N/A
15. Are pushing or pulling forces reduced or eliminated?  
16. Does the employee have an obstructed view of handling the task?  
17. Is there a preventive maintenance program for equipment?  
18. Are workers trained in correct handling and lifting procedures?  
19. Are workers trained or certified, where necessary, in the proper use of equipment?
20.16.3 Appendix C: Arrange Your Computer Work-Station to Fit You

Arranging Your Computer Work-Station to Fit You

- **HEAD** Directly over shoulders without straining, about an arm's length from screen.
- **NECK & SHOULDERS** relaxed.
- **BACK** Upright or inclined slightly forward from the hips. Maintain the same spinal curve the back has when standing.
- **ELBOWS** Relaxed at a 75° - 135° angle.
- **WRISTS** Relaxed and straight, not angled up or down.
- **KNEES** Slightly lower than hips.
- **CHAIR** Slightly forward so knees are in the correct position.
- **FEET** Firmly planted on the floor. A footrest may be needed for shorter people or high work surfaces.

- **SCREEN** At eye level or slightly lower.
- **KEYBOARD** Best when kept flat and close to elbow level.
- **WORK SURFACE** At a height to allow the elbow to be relaxed at a 70° - 135° angle. Chair may need to be raised to accommodate this. High enough to allow knees to fit under.
20.16.4 Appendix D: Record of Ergonomics Training

LOCATION OF TRAINING: ___________________________ DATE: _______________

NAME OF TRAINER: _______________________________ PHONE# ______________

NAME OF SUPERVISOR: _____________________________ PHONE# ______________

NAME OF ATTENDEE: SIGNATURE OF ATTENDEE:

1. ___________________________ ___________________________
2. ___________________________ ___________________________
3. ___________________________ ___________________________
4. ___________________________ ___________________________
5. ___________________________ ___________________________
6. ___________________________ ___________________________
7. ___________________________ ___________________________
8. ___________________________ ___________________________
9. ___________________________ ___________________________
10. ___________________________ ___________________________
11. ___________________________ ___________________________
12. ___________________________ ___________________________
13. ___________________________ ___________________________
14. ___________________________ ___________________________
15. ___________________________ ___________________________
TRAINING TOPICS COVERED

1. An overview of the County's Ergonomics Program
2. Exposures associated with repetitive motion injuries
3. Symptoms and consequences of repetitive motion injuries
4. The importance of reporting symptoms and injuries to the supervisor
5. Job-specific ergonomic hazards, including: ______________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
6. Methods used to minimize ergonomic hazards and repetitive motion injuries, including:________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

LIST OF TRAINING MATERIALS AND HANDOUTS

1. ______________________________________________
2. ______________________________________________
3. ______________________________________________
## Appendix E: Ergonomic Resources

### County Contacts

<table>
<thead>
<tr>
<th><strong>Occupational Safety and Environmental Compliance</strong></th>
<th><strong>Furniture Vendor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1735 N. 1st Street, 2nd Floor, Suite 295</td>
<td>Coordinated Resources, Inc. (CRI)</td>
</tr>
<tr>
<td>San Jose, CA 95112</td>
<td>25 Metro Drive, Suite 100</td>
</tr>
<tr>
<td>(408) 441-4280</td>
<td>San Jose, CA 95110</td>
</tr>
<tr>
<td>fax (408) 453-8126</td>
<td>(408) 437-0277 x139</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Employee Wellness Program</strong></th>
<th><strong>Purchasing Department</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>70 W. Hedding Street</td>
<td>1553 Berger Drive, Bldg. 1</td>
</tr>
<tr>
<td>8th Floor, East Wing</td>
<td>San Jose, CA 95112</td>
</tr>
<tr>
<td>San Jose, CA 95110</td>
<td>(408) 299-2121</td>
</tr>
<tr>
<td>(408) 299-4116</td>
<td>fax (408) 297-7633</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Valley Therapy Services</strong></th>
<th><strong>US HealthWorks</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2400 Moorpark Avenue</td>
<td>Santa Clara Facility</td>
</tr>
<tr>
<td>Lower Level, Suite 50</td>
<td>2488 De La Cruz Boulevard</td>
</tr>
<tr>
<td>San Jose, CA 95128</td>
<td>Santa Clara, CA 95050</td>
</tr>
<tr>
<td>(408) 885-7111</td>
<td>(408) 988-6868</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th><strong>Workers' Compensation</strong></th>
<th><strong>Milpitas Facility</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1735 N. 1st Street, 2nd Floor, Suite 250</td>
<td>1717 South Main Street</td>
</tr>
<tr>
<td>San Jose, CA 95112</td>
<td>Milpitas, CA 95035</td>
</tr>
<tr>
<td>(408) 441-4300</td>
<td>(408) 957-5700</td>
</tr>
</tbody>
</table>
Sunnyvale Facility
1197 East Arques Avenue
Sunnyvale, CA 94086
(408) 773-9000

San Jose Facility
2011 Monterey Road
San Jose, CA 95112
(408) 288-3800

San Francisco Facility
884 Dubuque Avenue
South San Francisco, CA 94080
(650) 635-0400

Modesto Facility
1524 McHenry Avenue, Suite #520
Modesto, CA 95350
(209) 575-5801


**Videos**

Call OSEC at 441-4280 to reserve the following videos:

<table>
<thead>
<tr>
<th>Title:</th>
<th>Length:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Your Working Back (ERG-1)</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Back Safe-Generic Short Course (ERG-5)</td>
<td></td>
</tr>
<tr>
<td>Back Safe-Law Enforcement Short Course (ERG-4)</td>
<td>30 minutes</td>
</tr>
<tr>
<td>VDT-Eyes (ERG-8)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audience:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Employees</td>
<td>Dr. Leonard Ring uses a charismatic and straightforward approach to show how and why spinal injuries occur. Dr. Ring demonstrates proper lifting techniques to avoid back injuries.</td>
</tr>
<tr>
<td>All Employees</td>
<td>This Back Safe video discusses how the back works, common back ailments, treatment for back injuries, risk factors, injury prevention techniques and proper lifting. Includes a three-minute back exercise to prevent back injuries.</td>
</tr>
<tr>
<td>All Law Enforcement Officers</td>
<td>This Back Safe video discusses the anatomy and movements of the back; common ailments and how to care for them; the risk factors for repetitive motion injuries in law enforcement; how to perform tasks correctly; and exercises and stretches to reduce back injuries.</td>
</tr>
<tr>
<td>Supervisors, Safety Coordinators, and those who administer the Back Safe Program</td>
<td>This video shows how to run the Back Safe program using the materials provided. It shows how to set up and perform the obstacle course, and discusses the best approach to changing unsafe techniques.</td>
</tr>
<tr>
<td>All Employees who use computer workstations</td>
<td>Part I - Ergonomics: Describes how proper lighting for VDT work,</td>
</tr>
</tbody>
</table>
proper placement of terminals to prevent glare, and proper height level when using the keyboard. Part 2 - Exercises: Provides simple eye exercises to reduce eye strain.

**Title:** VDT-Hands (ERG-9)  
**Audience:** All Employees who use computer workstations  
**Description:** Part I - Ergonomics: Discusses hand and wrist movement, carpal tunnel syndrome; tendonitis, and how to minimize the stresses of keyboard work. Part 2 - Exercises: Describes easy exercises to do while seated which will relieve tension in the hands and wrists.  
**Length:** 15 minutes

**Title:** VDT-Torso (ERG-10)  
**Audience:** All Employees who use computer workstations  
**Description:** Part I - Ergonomics: Describes how the body is structured. It reviews correct posture and provides tips for comfort at VDT workstations. Part 2 - Exercises: Provides examples of stretching exercises for the back, neck, legs, and shoulders.  
**Length:** 29 minutes

**Title:** The Seated Worker Workout (ERG-11)  
**Audience:** All Employees who use computer Workstations  
**Description:** Describes exercises designed to reduce sore muscles and relieve stress while working at video display terminals.  
**Length:** 10 minutes

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**Brochures & Booklets**

Order ergonomic training booklets from:  
Krames Communications  
Order Department  
1100 Grundy Lane  
San Bruno, CA 94066-9821  
1-800-333-3032 FAX: 1-415-244-4512
Title: Arranging Your Workstation to Fit You
Product #: 1448-KBWT
Cost: $1.35

Title: Preventing Repetitive Strain at the Keyboard
Product #: 1387-KBWT
Cost: $1.25

Title: Carpal Tunnel Syndrome
Product #: 1255-KBWT
Cost: $1.50

Title: Protecting Your Neck & Shoulders
Product #: #9885-KBWT
Cost: $20.00 (in packs of 50)

Title: Protecting Your Elbows & Forearms
Product #: 9884-KBWT
Cost: $20.00 (in packs of 50)

Title: Protecting Your Back & Legs
Product #: 9886-KBWT
Cost: $20.00 (in packs of 50)

Title: Protecting Your Hands & Wrists
Product #: 9883-KBWT
Cost: $20.00 (in packs of 50)

Title: Back Tips for Health Care Providers
Product #: 199-KBWT
Cost: $135.00