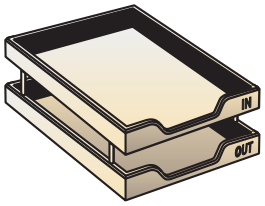
TEXAS WORKERS' COMPENSATION COMMISSION

Office Ergonomics



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Introduction

Ergonomics can have a large impact on the productivity and profits of an organization. When employees are working at improperly designed workstations, muscle fatigue, eyestrain, headaches, and other discomforts can become factors in decreasing the effectiveness of your organization. These factors act to decrease morale and motivation and eventually may cause injury or illness. A good ergonomics program can help reduce the physical strain put on your employees while they are working, and increase morale and motivation, having a positive effect on productivity.

In the state of Texas in 2001 there were 2,923 reported carpal tunnel injuries. The average medical costs for those injuries were $4,949 per claim and the costs of income benefits, not including death or lifetime benefits, averaged $5,746 per claim. Also during 2001 there were 3,583 reported cumulative trauma injuries. These medical costs averaged $4,257 per claim and the income benefits averaged $5,160 per claim. As you can see, an ergonomic injury can have a large effect on your company's profits as well as productivity and morale. Ergonomic injuries can be easily prevented through training and fitting the work environment to the employee.

All offices require people to interact with the working environment. The layout of their desk, the placement of the computer, the type of chair, and over all space that people work in affects ergonomic conditions. To further complicate matters, people come in different sizes and shapes and the work environment needs to be adjusted to meet the individual needs of the employee. If the work environment is not adjusted to meet the needs of the individual, injuries and illnesses can result.

The Ergonomic Checklist

The ergonomic checklist is a tool used to evaluate the work environment to determine compatibility. By evaluating the work environment, contributing factors to injuries and employee discomforts can be identified. These factors include employee posture, excessive reaching and twisting, wrist position, lighting, and other factors. By using the checklist you can determine which factors are causing or may cause injuries. The identified factors can be addressed and corrected to help prevent further injury or new injuries from occurring.

An ergonomic checklist consists of a series of "yes" or "no" questions that are answered to determine problem areas. The attached ergonomic checklist will be covered in detail to assist you in performing ergonomic assessments of your employees' workspace.

General Information

The first part of the checklist contains general information about the ergonomic assessment that has been performed. This information includes the date of the assessment, employee name, and work location of the employee, who conducted the assessment, and when the assessment was reviewed and by whom. This information is important because it tracks who has had an assessment, when that assessment was conducted and by whom, and when that assessment was reviewed to determine if any training or new equipment is needed.

Sharp Edge Hazards

The next section of the checklist will involve looking for sharp edges that the employee presses against on a regular basis. These sharp edges can cause localized pressure injuries that

can include bruising, slowing of blood circulation, and nerve damage. Common areas for sharp edges are the edges and supports of desks, staplers, keyboard trays, filing cabinets, and various other pieces of office equipment, depending on age and quality of the equipment. Newer office equipment tends to have a better ergonomic design, making sharp edges less of an issue.

Equipment Adjustability

Another key item to check when performing ergonomic assessments is the adjustability of the work environment. A good ergonomic environment allows for maximum adjustability of the office equipment including desk height, chair height, backrest, seat pan, arm rests, foot rests, computer screens, keyboard position, document holders, and lighting. The adjustability of the office equipment is the key factor in creating safe working environments for your employees.

Posture

After determining if the proper office equipment is available to the employee, it is time to see if it is properly adjusted. The first thing to look at is the employee's posture when working. This step is going to involve actually watching the employee work, to see if the following conditions are met:

- Are both feet flat on the floor or on a footrest?
- Are the knees bent at approximately 90° angles?
- Are the thighs and the lower arms parallel to floor?
- Do the thighs fit comfortably under the desk?
- Is the back fully supported by the backrest?
- Are the upper arms hanging by the sides?
- Are the wrists in neutral positions?
- Is the neck bent forward to look at documents or the computer screen?
- Does the employee lean forward or hunch over while typing or performing other job duties?

A proper posture will help ensure good circulation and reduce muscle fatigue and is essential to preventing injuries, increasing motivation and morale. Pay close attention to this section of the checklist, but remember that poor posture can be a product of a lifetime of bad habits and simple readjustments of office equipment may not be the solution.

Training may also be needed to teach the importance of good posture in day-to-day living.

Work Environment Interface

Now that employee posture has been reviewed, it is time to assess the employee's interface with the work environment. This involves all of the equipment and materials that are used on a daily basis. Most injuries or illnesses are going to occur at this interface. The hazards differ depending on the tasks that are performed at the desk. For instance let's find out what to look for when using a computer.

Computer

When using the computer, an employee will interface with the computer in several different ways. The first way is using the central processing unit (CPU). The power switch, CD, and Disk drives are located on the CPU. The CPU has to be easily accessible without excessive twisting and reaching. In other words, the CPU should be within arm's reach and should not require the employee to twist, lean, or reach excessively to turn the computer on or use computer disks.

The next interface with the computer is the computer screen. The computer screen should always be positioned directly in front of the employee using the computer. The height of the computer screen should be such that the first line of text is at the eye level of the employee. The employee should

sit approximately an arm's length away from the screen, with the hands folded at the knuckles. If the computer screen is positioned too high or too low, or if it is too close or too far, these factors can cause problems including fatigue, eyestrain, neck strain, and headaches. Glare from overhead lights and nearby windows can add to these problems.

Computer keyboards also need to be checked. The employee should be able to type while keeping the wrists in a neutral position and without having to reach excessively with their fingers. The employee should be able to reach the keyboard while keeping the arms in a comfortable position hanging next to the body. If the employee is not able to keep their wrists in a neutral position, the risk for carpal tunnel syndrome increases dramatically. When the employee is reaching forward with their arms to type on the keyboard, it will put stress on their shoulders, back, and neck, causing fatigue and pain.

The last interface with the computer is the harmless little mouse. It is important that employees maintain a neutral wrist position when using the mouse. To help maintain that neutral position, employees should use the arm and the shoulder, not the wrist. Another problem that is often overlooked is the placement of the mouse. The employee should not be reaching for the mouse, rather the mouse should be next to the computer keyboard. Having to reach for the mouse will cause excessive strain on the shoulder and arm. Last, but not least is the fact that people do not like to let go of the mouse when they are finished with it. Normally, people will continue to hold the mouse when reading documents or surfing the Internet. Continuing to hold on to the mouse promotes a static position that can be avoided. Letting go of the mouse and moving the arm will help to prevent fatigue and other symptoms of static positions.

Workstation

After reviewing how the employee interfaces with the computer, check out the workstation layout.

A workstation is the location where an employee performs his or her job. In the office environment, employees work in a wide range of environments, from small to large cubicles or offices withdesks. There are different factors that need to be taken into consideration when reviewing the workstation of an employee. The first item to look at is the overall size of the workspace. While doing this, make mental notes about what is in the workspace. For instance, is this a cubicle or an office? How is the workspace laid out? Are there large or small amounts of workspace and are all of the components of the workplace adjustable? The idea is to get a feel for the environment of the workspace. Observe the employee working in the workspace and look for awkward postures, excessive reaching, the height of the work surface, and how the employee interfaces with the workspace. The employee should have commonly used items within arm's reach to reduce reaching and awkward postures. The work surface should be large enough for the employee to comfortably perform their job duties.

If there is too much clutter from personal items or work being piled on the desk, the employee may be forced to spend long hours in awkward postures. Workspaces should be neat and orderly, with personal items located in places that do not interfere with the normal functions of the job. The areas under desks and cubicles should be free from clutter, allowing the employee to move their feet and legs as needed and promote a proper sitting position. Legs and feet must have enough room to be kept in comfortable positions and allow for movement and stretching.

One of the most important items to check that will have an overall effect on the mood of the employee is workstation lighting. Too much or too

little light can cause eyestrain, leading to fatigue and headaches. Glare from overhead lights and windows can have the same effect. When checking the lighting for a workstation, be sure to check for a glare on the computer screen from lights and windows. Overhead lights may need to be removed and blinds may need to be added to the windows to remove the glare. Computer monitors should be at a 90° angle to any window to help reduce glare. Task lighting should be used to remove shadows and glare from the work surfaces and to ensure that adequate lighting is provided for reading and writing.

Telephones

Telephones can be a major pain in the neck for employees. When employees are talking on the phone and performing other duties at the same time, the receiver tends to get cradled between the head and the shoulder, causing the median nerve to be constricted. If this action is done often enough and long enough, the neck will become tired and sore. If this action continues, headaches and soreness in the shoulders can result. There are two possible solutions for this situation; one is to use a speakerphone during the time that these tasks must be completed. The other solution is to provide your employees with headsets for their phones. Both of these solutions will allow the employee to complete their job without causing injury to their neck. Another situation that needs to be checked involving the telephone is the placement of the phone in the workspace. Sometimes the telephone becomes that annoying item that you can't get rid of and don't have space for or it is perceived to be so seldom used that it gets placed in an area of the desk that is not always the most convenient for the employee to use. Be sure that the telephone is located in a place that is convenient and does not cause excessive reaching or awkward postures during use. We all use telephones more than we think, so it is important to keep them in a location that allows for safe, easy use.

Training

The last part of this ergonomic checklist is one of the most important. All employees must be trained on how to work safely in the office environment. Training is one of the best ways to prevent ergonomic injuries. When you complete your checklist be sure that the employee has received training on proper postures, workstation adjustment, and safe work methods. By taking the time to train your employees on the proper ergonomic techniques, injuries can be avoided.

Summary

Ergonomics have become an important part of life in the workplace. By following proper ergonomic techniques, productivity can be increased and injury costs decreased. By informing your workforce and ensuring that they use proper ergonomic techniques, your employees will be less fatigued and you will show them that you care. This will improve employee morale and motivation. Office ergonomics is one key to a happy and healthy workforce.

The following three pages contain a checklist for you to use in your workplace. Before you use it, be sure to review and match it against your work environment. This checklist is generic and may not cover all of the ergonomic hazards that are present in your work environment.

Office Ergonomics Checklist

Date: _____

Employee Name: _____

Work Location: _____

Conducted by: _____

Reviewed by: _____ *Date:* _____

Are there sharp edges that press on the employees':	Yes	No
Hands?		
Fingers?		
Wrists?		
Forearms?		
Thighs?		
Other? Comment:		
Are the following items easily adjustable?	**Yes**	**No**
Seat height		
Back rest/ Lumbar support height		
Back rest movement forwards and backwards		
Chair arms		
Chair seat pan forwards and backwards		
Chair seat pan tilt		
Foot rest		
Desk height		
Computer screen tilt		
Distance from computer to operator		
Keyboard height		
Keyboard angle		
Distance from keyboard to operator		
Document holder		
Lighting		
Other Comment:		
Proper posture for employee:	**Yes**	**No**
Are both feet flat on the floor or on a footrest?		
Are the knees bent at 90° angles?		
Are the thighs parallel to the floor?		
Do the thighs fit comfortably under the desk?		
Is the upper back supported by the backrest?		
Does the lumbar support the lower back?		
Are the upper arms hanging by the sides?		

Are the lower arms parallel to the floor?		
Are the wrists in a neutral position?		
Is the neck bent forward to look at the computer screen?		
Is the neck bent forward to look at documents?		
Does the employee lean forward while typing?		
Is the employee hunched over his/her work?		
Computer keyboard, screen and mouse	Yes	No
Can the employee access the computer disk drives without excessive reaching or twisting?		
Is there any glare on the computer screen caused by lighting from overhead lights or windows?		
Is the top of the computer monitor tilted back?		
Is the first line of text on the computer screen at eye level?		
Is the computer monitor positioned directly in front of the employee?		
Is the computer screen at a comfortable viewing distance from the employee?		
Does the keyboard angle allow for the wrists to maintain a neutral position?		
Is the keyboard at the appropriate height to maintain the wrists in a neutral position?		
Can the fingers reach all of the keys without awkward straining?		
Does the employee have to reach for the keyboard?		
Is the employee's wrist in a neutral position when using the mouse?		
Is the employee using the whole arm to move the mouse?		
Is the mouse next to the keyboard or does the employee have to reach for the mouse?		
Does the employee let go of the mouse when they are not using the it?		
Workstation layout	Yes	No
Are frequently used items within arm's reach?		
Does the employee have to twist or excessively reach to perform job duties?		
Is the workstation height at a comfortable height for the employee?		
Is the working surface covered with excess clutter?		
Is there adequate legroom under the desk for the employee?		
Is the computer CPU within easy reach of the employee?		
Lighting	Yes	No
Does the work area have proper lighting to perform job duties?		
If windows are present, are there blinds to adequately control the light?		
Are the blinds adjusted throughout the day to maximize the natural light and reduce glare?		

Is a task light being used for reading and other work being performed on the desktop?		
Telephones	**Yes**	**No**
Is the telephone within easy reach?		
Is the employee cradling the telephone receiver?		
Does the telephone have a speakerphone?		
Does the telephone have a headset?		
Has the employee been trained on:	**Yes**	**No**
Proper postures?		
Proper work methods?		
When and how to adjust their workstations?		
How to seek assistance for their concerns?		

Comments: