

Occupational Health
and Safety Committee

Prevention Guidelines
for Strain Injuries
in the
Office Environment

A Joint Initiative



BRITISH
COLUMBIA

Public Service Employee
Relations Commission



B.C. Government and
Service Employees' Union

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The authors wish to recognize the following persons for their support, assistance and/or contributions to this guide:

Joint Provincial Occupational Health and Safety Committee:

Debra Barten	Mohammed Alam	Bob Dalby
Mona Sykes	Wendi Lawrence	Bob Marsh
Darryl Walker	Rod Mann	Wayne Ironmonger
Mark Christie	Tony Raymond	

George Heyman,

Vice President, British Columbia Government and Service Employees Union (BCGEU)

Dr. William Lakey,

Medical Director, Government Employees Health Services,
Public Service Employees Relation Commission (PSERC)

Joe Paul,

Accident and Prevention, Ministry of Forests

Angie Chow,

Accident and Prevention, Ministry of Transportation and Highways

Bawan Saravanabawan,

Ergonomist, Workers' Compensation Board of British Columbia

Peggy McCann,

Director, Back in Action

BC Government Ergonomic Sub-Committee

Authors:

Richard Golob,

Occupational Health and Safety Advisor, Corporate OHS, PSERC

Mona Sykes,

Safety Officer, BCGEU

Front cover illustration:

Raeside, copied from the previous Ministry of Social Service's Joint OSH Committee poster.

Illustrations:

Dale Samsonoff, Human Resource Technician, Ministry of Finance

Typesetting and Design:

Susan Peterson, Typesetting and Design Services, Ministry of Finance

Introduction

This booklet was developed as a joint venture of the Public Service Employee Relations Commission, Government of British Columbia, and the British Columbia Government and Service Employees Union.

The objective of this booklet is to provide a general guide for Occupational Health and Safety Committee members in assisting fellow workers in the prevention of Strain Injuries* in the office environment.

It provides the user with the knowledge necessary to actively participate in the prevention of Musculoskeletal Injuries (MSI) at work. Which includes:

-) what are MSIs
-) what are MSI signs and symptoms
-) what causes MSIs
-) explanation of easy, safe work practices and low cost prevention measures for MSIs
-) checklists for OHS committee workplace inspection teams



All efforts have been made to make this a workable and user-friendly guide. Most of the suggestions made in this guide can be done by the employee—for example, changing the height of the chair, monitor, location of mouse or rearranging the workspace on the desk.

*Note: “Strain Injuries” is used in the title of this document and this introduction due to it being a common term that most workers are familiar with and being referenced in Article 22.18 of the Government of BC and BCGEU 12th Master Agreement. To be consistent with the new WCB Ergonomics Regulation, the term “Musculoskeletal Injuries (MSI)” is utilized throughout the rest of this document.



ARTICLE 22.18 Twelfth Master Agreement between the BC Government and the BCGEU

22.18 Strain Injury Prevention

- (a) The parties agree that there is a shared interest in minimizing and/or eliminating—skeletal strain injuries or illnesses which are work related.
- (b) Local Occupational Health and Safety Committees (or Union and Employer designated safety representative) shall, in the performance of regular worksite inspections, identify the following risk factors which may contribute to risk:
 - (1) the work methods and practices
 - (2) the layout and condition of the workplace and workstation
 - (3) the characteristics of objects or equipment handled
 - (4) the environmental conditions
 - (5) the physical demand of workin a manner consistent with generic guidelines developed by the Provincial Joint Occupational Health and Safety Committee.
- (c) Where new equipment will be introduced to the workplace, or during the design and planning stages of new or renovated workplaces or workstations, the Employer shall seek the appropriate advice with respect to the risk factors noted in (b). Such advice will be sought from resources which will, where appropriate, include a joint occupational health and safety committee or designated safety representatives.

WCB Ergonomic Regulation

Ergonomics (MSI) Requirements

The purpose of sections 4.46 to 4.53 is to eliminate or, if that is not practicable, minimize the risk of musculoskeletal injury to workers.

Definition 4.46

In sections 4.47 to 4.53 (the Ergonomics (MSI) Requirements)

“*musculoskeletal injury*” or “MSI”

means an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work.



Risk identification 4.47

The employer must identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI).

Risk assessment 4.48

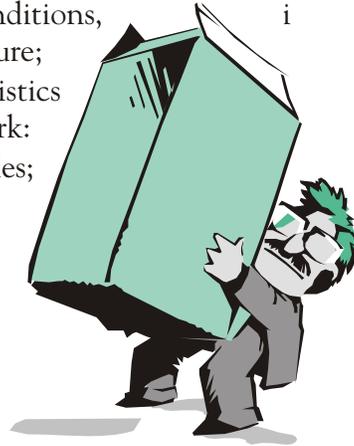
When factors that may expose workers to a risk of MSI have been identified, the employer must ensure that the risk to workers is assessed.

Risk factors 4.49

The following factors must be considered, where applicable, in the identification and assessment of the risk of MSI:

- (a) the physical demands of work activities, including
 - (i) force required,

- (ii) repetition,
- (iii) duration,
- (iv) work postures, and
- (v) local contact stresses;
- (b) aspects of the layout and condition of the work-
place or workstation, including
 - (i) working reaches,
 - (ii) working heights,
 - (iii) seating, and
 - (iv) floor surfaces;
- (c) the characteristics of objects handled, including
 - (i) size and shape,
 - (ii) load condition and weight distribution,
and
 - (iii) container, tool and equipment handles;
- (d) the environmental conditions,
including cold temperature;
- (e) the following characteristics
of the organization of work:
 - (i) work recovery cycles;
 - (ii) task variability;
 - (iii) work rate.



Note: In work situations where a risk of MSI exists, typically only some factors from the list will be applicable. The WCB provides the chart Applicability of Risk Factors to assist.

Risk control 4.50

- (1) The employer must eliminate or, if that is not practicable, minimize the risk of MSI to workers.
- (2) Personal protective equipment may only be used as a substitute for engineering or administrative controls if it is used in circumstances in which those controls are not practicable.
- (3) The employer must, without delay, implement interim control measures when the introduction of permanent control measures will be delayed.

Education and Training 4.51

- (1) The employer must ensure that a worker who may be exposed to a risk of MSI is educated in risk identification related to the work, including the recognition of early signs and symptoms of MSIs and their potential health effects.
- (2) The employer must ensure that a worker to be assigned to work which requires specific measures to control the risk of MSI is trained in the use of those measures, including, where applicable, work procedures, mechanical aids and personal protective equipment.

Note: The WCB provides the pamphlet *The Basics of MSI Risk Identification* to assist with the application of section 4.51 (1). Materials addressing other matters such as risk assessment and control are also available.

Evaluation 4.52

- (1) The employer must monitor the effectiveness of the measures taken to comply with the Ergonomics (MSI) Requirements and ensure they are reviewed at least annually.
- (2) When the monitoring required by subsection (1) identifies deficiencies, they must be corrected without undue delay.

Consultation 4.53

- (1) The employer must consult with the occupational health and safety committee, if any, or the worker health and safety representative, if any, with respect to the following when they are required by the Ergonomics (MSI) Requirements:
 - (a) risk identification, assessment and control;
 - (b) the content and provision of worker education and training;
 - (c) the evaluation of the compliance measures taken.
- (2) The employer must, when performing a risk assessment, consult with
 - (a) workers with signs or symptoms of MSI, and
 - (b) a representative sample of the workers who are required to carry out the work being assessed.



What is Musculoskeletal Injury (MSI)?

Musculoskeletal Injury/MSI—The Workers Compensation Board (WCB) of British Columbia defines MSI as: “an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work.” (This definition includes terms commonly used to refer to MSI’s: repetitive strain injury; musculoskeletal disorder; cumulative trauma disorder; musculo–skeletal strain injuries; and repetitive motion injury).

MSI has been a reported problem for workers performing repetitive, unaccustomed or physically demanding tasks such as assembly line work, meat packing, sewing, playing musical instruments, and Video Display Terminal (VDT) work. MSI can also be caused from activities outside the workplace.

What can cause Musculoskeletal Injury (MSI)?

MSI can be caused by any demanding activity that exceeds the ability of the body to do work. Common factors that are associated with MSI include many uninterrupted repetitions of an activity or motion, performing an activity in an awkward or unnatural posture, maintaining static posture for prolonged periods, failing to take frequent short breaks, and force. Also, certain medical conditions such as rheumatoid arthritis and diabetes may contribute to MSI.

Why is it important to exercise care in the selection, installation, set up and use of office equipment?

Some people who use computers and other office equipment experience physical discomfort during their use. Sometimes this discomfort leads to a Musculoskeletal Injury. Proper selection and use of equipment can help to minimize the risk and eliminate discomfort. Changing tasks frequently will help prevent muscle stiffness and fatigue. (As explained further on in this document)



What are the symptoms of Injury (MSI)?

The symptoms of MSI vary, and range from minor discomfort to severe pain.

A symptom can be felt but cannot be observed, such as:

-) pain
-) joint stiffness
-) muscle tightness
-) muscle weakness
-) a feeling of “pins and needles”
-) numbness
-) a general feeling of tiredness
-) a burning feeling

A sign can be observed, such as:

-) redness
-) swelling
-) skin colour change
-) difficulty moving a particular body part

Pain is the most common symptom of MSI. The pain can range from mild discomfort to extreme discomfort. The pain is not always confined to the site of injury it can be transmitted to other parts of the body.

Musculoskeletal Injury (MSI) may progress in stages: early, intermediate and late.

Early Stage: The body aches and feels tired at work but symptoms disappear during time away from work. The injury does not interfere with the ability to work. The injury will heal completely if dealt with properly at this early stage.

Intermediate Stage: The injured area aches and feels weak near start of work, until well after work has ended. Work is more difficult to do. The injury will still heal completely if dealt with properly.

Late Stage: The injured area aches and feels weak even at rest. Sleep is affected. Even light duties are very difficult. The injury may not heal completely but effects can be eased if dealt with properly.

Not everyone goes through these stages in the same way. In fact, it may be difficult to say exactly when one stage ends and the next begins. The first pain is a signal that the muscles and tendons should rest and recover. Otherwise, an injury can become longstanding and sometimes irreversible. The earlier people recognize signs and symptoms, the quicker they should respond to them.



What should you do if you start to experience MSI signs and symptoms or discomfort?

By following and ensuring proper equipment and work environment set up and use, the risk of developing MSI can be minimized. However, if employee is experiencing any discomfort he/she should report it to their supervisor and Occupational First Aid attendant. First aid rendered/received is recorded in the First Aid treatment book and where necessary the employee should be advised to consult their physician. Typically, the earlier a problem is diagnosed and treated, the easier it may be to resolve with less intrusive measures.

This process insures that:

-) workplace interventions are implemented that will reduce the risk to workers (early stage),
-) early treatment (First Aid) to reverse the problem (early and intermediate stage),
-) early diagnosis and treatment to reduce severity (intermediate and late stage)

Note: WCB provides the pamphlet "The Basics of MSI Risk Identification" and the chart "Applicability of Risk Factors" which identifies risk factors pertaining to ergonomics.

Workplace Specifics

General Posture

While sitting at workstation, employee's back should be erect and/or angled slightly backwards, so that the back (lumbar area) can be supported by the backrest.

Employees' arms should be relaxed and loose, elbows close to side, with the forearms and hands approximately parallel with the floor.

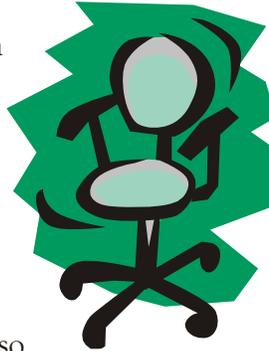
Wrists should be as straight as possible while keyboarding or using the mouse. They should not have to be bent upward, downward, or to either side more than 10 degrees.

Thighs should be horizontal or angled slightly downward. The lower legs should be near a right angle to thighs. The feet should rest comfortably on the floor (flat). If necessary, a footrest should be used to get into a comfortable position. (Refer to section on chairs)

The head should be upright over the shoulders in a relaxed position, with eyes looking slightly downward. Employees should avoid working with their head or trunk twisted in an awkward position. (Refer to diagram on page 28.)

Chairs

Employee's chair should have a stable base (for example: five legs with casters). The chair must provide a comfortable sitting position and employee should be able to freely swivel from side to side.



The chair should be adjusted so that the user's arms are at one's side, with elbows at 90 degrees when typing on keyboard. If the chair has an adjustable seat pan, inclining the seat slightly back will assist in holding employee in the seat as well as giving proper back support.

Footrests (If required)

Footrests support employee's feet and can reduce the pressure on the back of thighs (caused by the thighs contacting the seat). A footrest should be used if the feet do not rest flat on the floor after the chair height has been adjusted (as described above in the chair section). You should place the footrest on the floor, close to the chair, and adjust height so that it relieves pressure from behind the legs when sitting. It is recommended to use a non-angled footrest with top surface measurements of 60 cm. x 30 cm. (24 in. x 12 in.) (Refer to Appendix B)

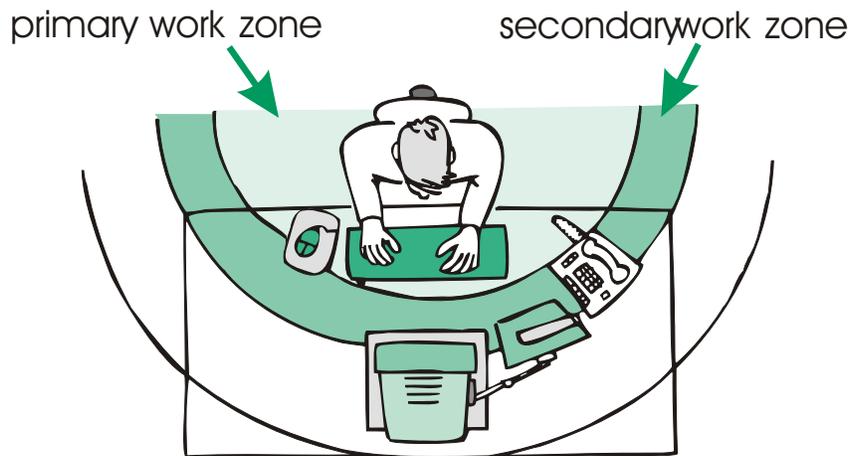
Desks

Sufficient desk space should be available to allow employee to set up equipment in a convenient, comfortable arrangement. Accessories should be organized on the desk as follows:

-) items used frequently (primary work zone) are close by 0–30 cm. (0–12 inches),
-) occasional use (secondary work zone) 30–50 cm. (12–20 inches),
-) seldom used 30 cm. (20 inches)

There should be enough space for the thighs (legs) to move freely under the desk top.

If possible, a desk with cable management capabilities should be used. This will keep the cables and wires orderly, off the floor and out of the way. If not available, arrange in an orderly fashion.

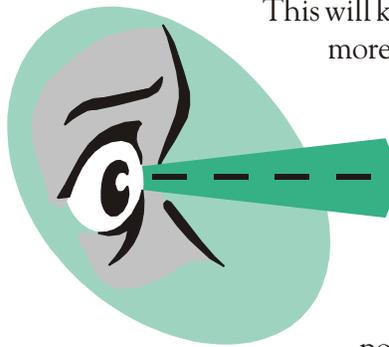


Items should be organized on the desk as to frequency of use.

Monitor

If employee's eyes are closer to the screen than 50 cm (20 in), this may cause visual fatigue. Most people prefer a viewing distance of approximately 60–cm (24 in).

The top line of the text on the screen should be eye level or slightly below eye level when sitting up straight.

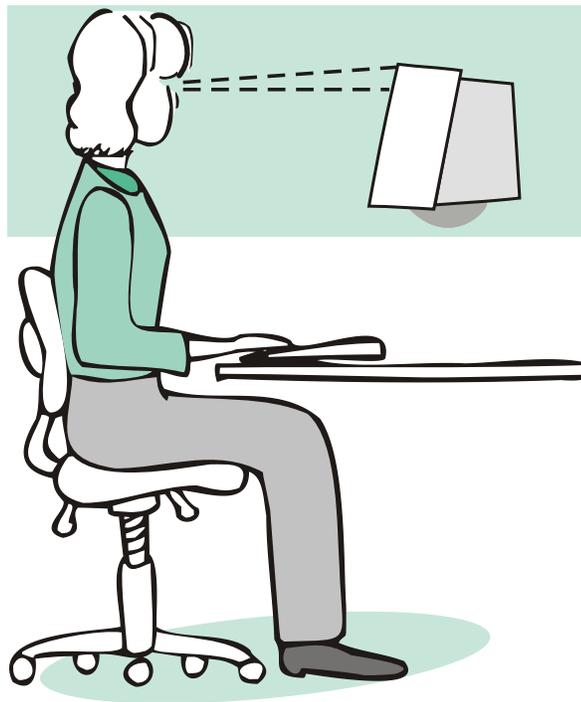


This will keep employee from looking down more than 15 to 20 degrees to see the center of the screen. The employee should not have to look down more than 60 degrees for normal work tasks, such as typing or reading.

Ideally the screen should be positioned perpendicular to the line of sight. In case of undesirable reflections, tilting the screen forward slightly usually solves the problem. However, if this is not sufficient, it may be necessary to change the position of the display monitor on the desk, or change the location of the desk. If this still does not correct the problem, the employee should try a monitor visor (*see* section on lighting, page 24).

The employee should keep the contrast and brightness adjusted to the level that is most comfortable. High contrast and low brightness is usually the preferable combination. A simple process that is commonly overlooked is the cleaning of the screen. The employee should clean the screen on a regular basis.

Note: Some employees may experience difficulty when wearing bifocals or progressive lenses. They may wish to change to eyewear suited for the environment. Advise them to consult with their optometrist or ophthalmologist.



The top line of text on the screen should be eye level or slightly below eye level when sitting up straight.

Lighting

Lighting in the work area should allow easy reading of documents and keyboard legends. If more light is needed for a particular task, the employee should use an individual lamp (“task lighting”) rather than increasing the general lighting. Ensure task lighting is of the type where the bulb is sufficiently recessed so as not to cause a bright spot in the field of view.

If possible, the employee should not position the display in front of a window where glare, high contrast, and reflections will interfere with computer screen presentations. The employee should try to position the display so the screen is at a right angle to the window.

Incoming light should be shielded or defused to prevent glare and distracting reflection. In cases where strong sunlight is a problem, curtains, adjustable shades or monitor visors are recommended.

Monitor Visors/ Anti-Glare Screens

Monitor visors are designed to place over top of the monitor, where anti-glare screens are designed to be placed over the monitor screen. Both are designed to reduce glare from light sources and reflective surfaces, as well as providing contrast when reading the screen (refer to Appendix B). Employees should regularly clean anti-glare screens as dust may build up which can blur the characters.

Keyboards

Most current keyboards are designed to prevent excessive bending of wrists while typing. Employees should not bend their wrists more than 10 degrees up or down, or more than 10 degrees sideways. Wrists should be kept straight by moving the entire hand and forearm over to use the function keys or numeric keypad.

The objective is to make sure that hands are in a “neutral” or straight in line with forearms when using the keyboard. This means that forearms, wrists, and hands should be in a straight line.

Employees may use a wrist support to help keep their wrists in a more comfortable and neutral position during rest periods. This is helpful if employees tend to drop their palms or wrists while typing. When keying, palms should not be resting on the support. When used, wrist support should be placed under the palms, not under the wrists. Employees should ensure that it is flush in height with the front edge of the keyboard and rounded or padded. Wrists should not rest on a sharp edge, such as a desk edge, when typing as this may cause Carpal Tunnel Compression.



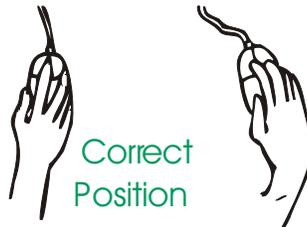
Wrong Position



Correct Position



Correct Position



Wrong Position

Correct Position

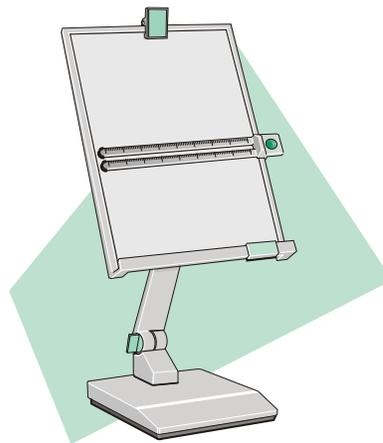
If a mouse is used, position it next to the keyboard so employee does not have to excessively reach while using it.

It is not necessary for the employee to type with very much force. Use of too much force can place unnecessary stress on the body, including tendons and muscles in hands, wrists, and forearms, and increase the risk of discomfort or injury.

Document Holders

A document holder will make it easier for employee to transfer information from a document to the screen (or if employee needs to read while using system). The document holder should be at the same distance from the eyes as the screen, next to the screen,* and at the same height as the screen. To help reduce stress on the neck and prevent eye fatigue, the back and forth movement of the head and eyes should be kept at a minimum while using the document holder.

**Note: There are some new designs available that allow documents to be placed in front of the screen*



Further Suggestions

If an employee's work involves prolonged work with V.D.T., employees eyes should be checked on a regular basis (refer to BCGEU Master Agreement Article #22.9).

If an employee wears eye glasses or contact lenses he/she should ensure the prescription is suitable for working on a display screen.

Employee should look away from the screen from time to time to help reduce eye strain. Focus on distant objects briefly. Also, blinking periodically helps lubricate the eyes.

Employee should avoid holding muscles tensed for long periods of time. Keep fingers and body relaxed.

Employee should change tasks frequently, this will help prevent muscle stiffness and fatigue. For example: Alternating between keyboarding, writing, filing, and moving around in the work environment helps keep muscles loose.

When prolonged screen work is required, the employee should take frequent short recovery breaks. A recovery break is changing to a different work task as described above (*also* refer to BCGEU Master Agreement Article #22.9). As a general rule, a five or ten minute recovery break every hour is a good idea. Short frequent recovery breaks are more beneficial than longer less frequent breaks. Data shows that people who work for long lengths of time without a recovery break are more prone to injury.

Prior to purchase of equipment in the office environment, there should be an opportunity for the employee to use the product on a trial basis. This will ensure that the product is suited for the employee and the job.

Employee should occasionally stretch the muscles in hands, arms, shoulders, neck and back. This stretching should be performed once per hour or at least as often as regularly scheduled breaks. (Refer to Appendix A for stretching examples).

Note: Stretching is recommended for prevention of injuries not as a cure. If injured, an employee should visit their physician.



Properly Set-up Workstation

Other Office Ergonomic Related Concerns

Filing Cabinets

Some common problems and solutions with the use of filing cabinets include:

-) Tightly packed files may contribute to muscle soreness due to holding awkward postures. Clear labelling and periodic review of the contents can help reduce overcrowding. Other means of storage include archiving of files.
-) For access to lower drawers, employee should use his/her legs to squat or alternatively adopt a kneeling posture in preference to bending.
-) It is advisable to check that a filing cabinet is level by using a small level. Where a cabinet is not level, the drawers may be difficult to open or close or may even cause drawer to remain in an opened position when not in use, which can be hazardous.
-) Instability of a cabinet when more than one drawer is open at a time can result in the whole cabinet falling onto the employee. Prevention measures may involve ensuring heavy material is filed in the lower drawer and/or attaching the filing cabinet to the wall or floor.



Photo Copying and Printing Paper

Boxes of paper are sometimes stacked on the floor in offices. They should be placed in a dedicated storage area close to the printer or photocopier. The size and weight of boxes may create a manual handling injury risk. Many suppliers now provide paper in quantity of 5 or 6 packages rather than 8 to 10 packages per box. This has reduced the manual handling risk by reducing the weight and size of each box so that they can be handled closer to the body.

Ensure employees are trained in proper lifting techniques. As well, appropriate strategies to reduce manual handling risk should be developed. For example, raising the paper storage location above the floor level to minimize bending; avoiding the handling of full boxes by removing individual packages from the box one at a time; or ordering smaller quantities of paper on a more frequent basis so that they can be stored on shelving with clear access.

Hand Carts

The use of a handcart to carry materials to and from a central storage area may be required to minimize the demands of this task. This should not just apply to large heavy items but also to smaller items such as files.



Telephone

Employees use telephones to varying degrees. Where there is high usage or the employee is dedicated to telephone work, specific equipment such as a headset or a speaker phone may be required.



Employees need to avoid cradling the phone between the ear and shoulder. This causes strain and discomfort to the neck and shoulder area. If using a headset or speaker phone is not possible, one hand needs to support the phone during use. Where there is frequent use of the phone, reducing the reach distance as described in the section on “Desks” should be considered.

Staplers

Staplers are designed to be used on a desk or bench. With occasional use, they do not present a hazard. If thick documents are to be stapled, a stapler appropriate for the task should be used to reduce the need for high levels of force to perform the task. If a stapler is used repeatedly for a prolonged period of time, this may be fatiguing for some people, in particular if they perform the task while seated, or the table or bench is at an unsuitable height requiring them to elevate their shoulders. High usage of a stapler may also result in excessive compression forces to the palm of the hand.

Electric staplers should be used where stapling is frequently required for prolonged periods. Control options such as the use of alternative attachment devices (for example, binding, bulldog and fold back clips) should be considered as well.

Staple Removers

For occasional removal of staples, a small pincer type staple remover is commonly used in the office. Where this task is identified as a risk, such as highly repetitive staple removing, a long handled remover should be used. Removing staples by hand (fingernails) should be avoided by employees.

Letter Openers

The use of letter openers usually doesn't present a problem in a normal office setting unless done repetitively over a long period of time. Some difficulties can be encountered in the grasping of the handle. The slim handle of a knife-like letter opener can be difficult to grasp. A larger handle enables a more solid grip.

Hole Punches

A range of hole punching devices are available and their use should be matched to the thickness of the documents being processed. Longer lever arms enable thicker documents to be punched with less force required by the operator and electric hole punches are available for high volume areas (example: print shops). Because of the forceful nature of this work, it is preferable to use hole punches at a standing height bench, pressing in a downward motion using arm(s) and shoulder(s).

Pens and Other Writing Implements

The increased use of keyboards in the office has reduced the degree to which many employees use a pen. None the less, a wide range of writing tasks exists in the office. A relaxed grip on the pen should be recommended to employees. As well, some attachments are available for pens, such as triangular tubing that is placed over the shaft of a pen.* A triangular attachment provides a better gripping surface and can reduce the overall force required to grip the pen. The use of these attachments should be determined by individual preference.

**Note: There are a number of different designs on the market, this is just one example.*



Remember: Poor posture and an improper workstation set up will lead to musculoskeletal injuries.

Workplace Checklist

Instructions

This checklist has been developed to allow direct assistance to employees in setting up their workstations and surroundings in the office environment. It is not intended for use as strictly a workplace assessment and passed on to someone else to implement. While going through the checklist you will be actually using it as a tool to guide you in setting up the employees workstation. If a portion of the checklist can not be completed during the review, simply comment on it in the comment section at the end of this list. If a part is not applicable simply put N/A in the box.

You should have on hand “Quick Fix” items as listed in Appendix B, which would enable you to immediately set up the employee’s workstation. If this is not possible, you should have loaners with you that can be left with the employee until they receive their own items (an ordering process should be in place for items, as initiated by your ministry OSH manager/representative or other designated person).



All recommended physical changes or cost items are to be directed to the employee’s manager by way of this checklist (as per normal protocol for workplace inspections).

General Posture

While going through this checklist and assisting the employee in properly setting up his/her workstation, keep the following general posture guidelines in mind.

While sitting at workstation, employee's back should be erect and/or angled slightly backwards, so that the back can be supported by the backrest.

Employees' arms should be relaxed and loose, elbows close to side, with the forearms and hands approximately parallel with the floor.

Wrists should be as straight as possible while keyboarding or using the mouse and should not have to be bent upward, downward, or to either side more than 10 degrees.

Thighs should be horizontal or angled slightly downward.

The lower legs should be near a right angle to thighs.

The feet should rest comfortably (flat) on the floor or footrest.

The head should be upright over the shoulder in a relaxed position, with eyes looking slightly downward.

Employees should avoid working with their head or trunk twisted in an unnatural position.

Chairs

Adjust chair so that it offers the best lower back (lumbar) support possible

Set seat pan to neutral or angle slightly back from horizontal (neutral) for appropriate comfort

Adjust height so that employees arms and wrists are in neutral position when typing

Feet should be flat on floor, if not, use a foot rest

Footrests (If required)

Place footrest on floor close to chair

Adjust height so that it relieves pressure from behind the legs when sitting. (This can also be accomplished by adjusting the chair)

Desks

Organize accessories on the table so that the items used frequently are close by e.g.:

- Frequently used 0–30 cm (0–12 inches)
- Occasionally used 30–50 cm (12–20 inches)
- Seldom used >50 cm. (20 inches)

Place phone on left side if right handed and visa versa

If possible, manage wires from keyboard and mouse so they are not in the way by routing them underneath the desk (if not, include in comment section)

Monitors

Locate monitor directly in front of the keyboard

Top line of the text on the screen should be eye level when sitting up straight

Keep monitor far enough away so that employee can read it comfortably (general rule is an arms length away)

Adjust contrast and brightness to comfort level

Advise worker to clean monitor surface on a regular basis

Some employees may experience difficulty when wearing bifocals or progressive lenses. Advise them that they may want to change to eyewear better suited for the work environment and to consult with their optometrist or ophthalmologist.

Lighting

If able, adjust the level of light to make it easy for employee to see the screen without squinting or straining

Adjust the screen so it is free of reflected glare (a monitor visor and/or an anti-glare screen can be utilized)

Position monitor so that employee's line of sight is parallel to the window

Ensure there is enough light to read hard copy easily

Desk Lamps (Task Lighting)

If this type of lighting is used:

Move desk lamp so that it illuminates the documents employee is reading

Try to avoid having the light directed at the monitor, employee's face or eyes.

Ensure task lighting is of the type where the bulb is sufficiently recessed so as not to cause a bright spot in the field of view

To avoid shadows on documents and reflected glare, place the task lighting so when it's on writing surface it is to employees' left, if right-handed, (or to right if left-handed).

Keyboards

Set keyboard so that the legs are folded in

Centre employees body over the alpha portion of the keyboard if this is where most of employees time is spent

Advise employee that it is not necessary to type with very much force

Keyboard Trays

Set angle of platform so that it is flat

Adjust height so that when typing wrist remains in a neutral position

If the keyboard tray does not adjust this way, raise or lower employees chair until the wrists/arms are in the proper position (refer to section on chairs)

Mouse

Position mouse so that it is next to the keyboard on the keyboard tray

If no room, employee can use a keyboard tray extension or mouse house (Refer to Appendix B)

Wrist Rests

When keying, advise employee that palms should not be resting on the support

Support should be placed under the palms, not the wrists

Support should be flush in height with the front edge of the keyboard, and rounded or padded

Wrists should not rest on a sharp edge, such as a desk edge, when typing

Document Holders

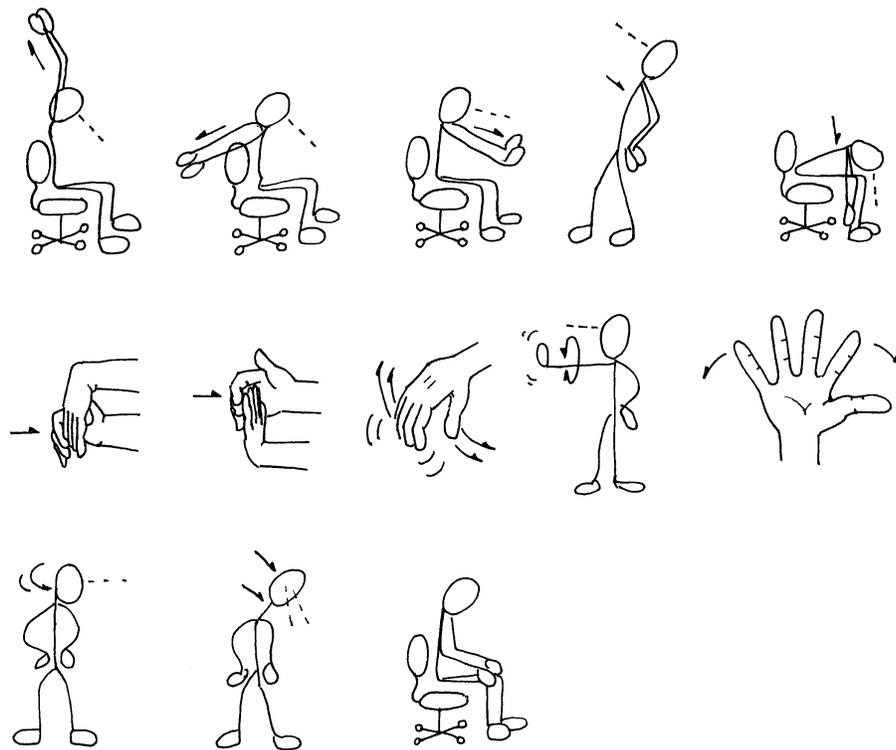
Place document holder so that it is next to the monitor screen and adjust to the same height and viewing distance as the monitor so that employee moves his/her head very little when looking from document to screen

After completing checklist and making required changes, refer to pages 29–33 of “Other Office Ergonomic Related Concerns.” If any are an issue, indicate in comment section below.

Appendix A

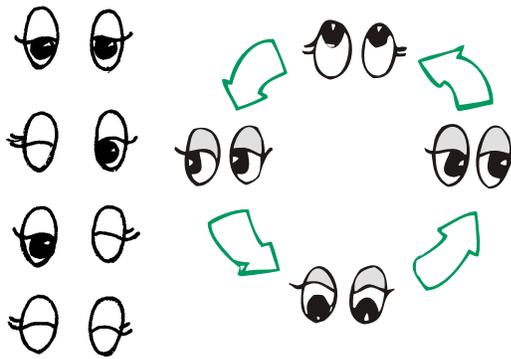
Stretching Exercises

Stretch periodically. This is particularly important when you work intensively or extensively at the computer. The following are some simple stretching exercises you can do at your work area. You may find that some or all of the stretches are helpful. Make a commitment to do at least some of them on a regular basis for a month, and then evaluate if you feel better at the end of each workday. Of course, if you have any medical problems, check with your physician.



Spending long periods of time staring at the computer monitor fatigues the eye muscles. Here are some simple tips to help alleviate the fatigue:

-) After every hour of computer work, exercise your eye muscles to relieve some of their stiffness.
-) Close your eyes for a few minutes.
-) Periodically look at objects far away from your work area.
-) Look off to the far corner of your work area or, if you have a window, look off into the horizon.



Remember: Break up your computer work with breaks, non-computer tasks and movement. (Refer to page 27, Further Suggestions)

Appendix B

Ergonomic Quick Fixes

These quick fixes were originally designed by the Ministry of Forests and the Ministry of Transportation and Highways to assist with ensuring workstations are set up appropriately for the user and, at the same time, economically. To order, contact your ministry Occupational Health and Safety manager/designate or other designated person.

Mouse House

This is a device, which fits over the number portion of the keyboard. It allows the mouse to be placed closer to the keyboard tray and closer to the same level of the keyboard. It works well if employee does not use the number pad. An excellent item if there isn't enough space on the keyboard tray to accommodate a mouse.
(Cost: Under \$7.00)

Paper Stand

This is a small document holder. It can be used to hold documents when used in combination with the computer. This helps to minimize neck strain when working with documents.
(Cost: Under \$10.00)

Binder Stand

This is a large document holder. It can be used to hold large documents when transcribing or reading from binders or books. This helps to minimize neck strain and avoid having to hunch over the desk to read from binders and books.
(Cost: Under \$15.00)

Monitor Visor

This is a device which fits like a visor over top of the monitor. It is made from mat board material. It can be custom made to fit employees monitor. It helps to control glare from lights, windows, and reflective surfaces.

(Cost: Under \$6.00)

Foot Rest

This device is made from wood and fits underneath the desk to rest employees feet. It works well especially for people whose feet come off the ground when they are sitting at a proper typing height. It helps to free up blood circulation behind the legs.

(Cost: Under \$7.00)

Computer Desk Corner Filler

This device is made from wood and is used to convert an L-Shaped desk into a corner desk. It is particularly useful when employees use their computer in the corner of the desk when it was not originally designed to be used in that position. This can help reduce strain on the neck and back.

(Cost: Under \$10.00)

Keyboard Extension

This is a piece of bookshelf material that is 28 inches wide and about 12 inches deep. It can be used to retrofit existing sliding keyboard trays that are not wide enough to accommodate a keyboard and mouse. This retrofit helps to relieve back pain and strain in the shoulder muscles.

(Cost: Under \$10.00)

Telephone Stand

This is a device that sits under the telephone to prop it up at an angle. It is useful if employee can't see the display screen on the telephone. It helps to minimize neck and back strain.

(Cost: Under \$10.00)

Notes