



# Ergonomics

Safe Work Guideline for Office Workstations

# 1. Introduction

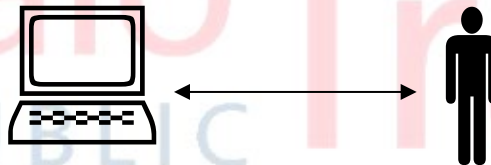
This booklet was prepared to provide **Buffalo Trail Public Schools** employees with information about ergonomics principles that can be used to optimize office workstations and jobs. The aim is to improve health and safety, job performance, and job satisfaction for all employees.

In today's office environments, computers have become an essential work tool. However, their extended use can lead to physical discomfort and sometimes injury if used incorrectly or with poor workstation designs.

**WORK-RELATED MUSCULOSKELETAL DISORDERS (WMSDs)** is an umbrella term that is used to group together work-related conditions of the musculoskeletal system. Examples of conditions that have been reported in office work environments include low back pain, shoulder tendinitis, carpal tunnel syndrome, and visual fatigue.

To avoid these potential problems, computer users need to learn how to recognize the risk factors of their job. They also need to learn how to apply ergonomics design and layout principles, to make their jobs and work environments more suitable and comfortable for them.

**ERGONOMICS** is the approach that is used to “match” jobs to human characteristics. When the demands of the job (e.g. sitting, viewing a monitor, working under tight deadlines) are matched to person's characteristics (e.g. body size, use of bifocal lenses, fatigue etc.), health and safety, and job performance are improved.



In the office, work environments can be optimized by applying ergonomics principles to:

- the design and layout of equipment (e.g. placement of keyboard)
- the design and layout of furniture (e.g. chair design)
- the way jobs are performed (e.g. workload related to quotas)
- the physical work environment, (e.g. glare related to lighting) and
- the psychological work environment (e.g. job satisfaction)

The ergonomics issues surrounding computer use may be more important for those employees who spend the majority of their day working with this technology at their workstations, than for employees who use them for only short periods of time. However, even employees who are minimally exposed will find helpful hints within this booklet to improve their comfort and work performance. The district encourages all decision units to provide equipment and workstations that promotes good ergonomics principles.

## 2. Workstation Assessments

General information on office ergonomics and workstation assessments can be obtained from Occupational Health and Safety. It is recommended that all staff review this publication and complete the *Office Ergonomics-Self Assessment Checklist*.

**If you are experiencing ongoing pain discomfort or time loss from work that may be related to your workstation:**

- Notify your supervisor and complete the *Work Related Incident Record (WRIR)*. Fax the record to Central Services at **842-3255** within 24 hours.
- Ask your supervisor to contact the Occupational Health and Safety Coordinator for additional advice and assistance.
- If you are covered by Worker's Compensation (WCB) and the symptoms result in medical aid, physical therapy or the potential for lost time from work, you will also be required to complete a *Worker's Report of Injury* form and send to Central Services within 24 hours.
- Your supervisor should contact the Occupational Health and Safety Coordinator for further assistance and if necessary to arrange for an ergonomic assessment.

## 3. Standards

Presently in Alberta, specific requirements for preventing injuries and illnesses during computer work are not addressed under the Occupational Health & Safety (OHS) Act Regulation and Code. However, Section 2 of the OHS Act does specify general employer and employee responsibilities for ensuring a safe and healthy work environment. Section 211 of the OHS Code also requires an employer to take action if a worker reports a musculoskeletal injury.

If a worker reports to the employer what the worker believes to be work related symptoms of a musculoskeletal injury, the employer must promptly

- a) Review the activities of that worker, and of other workers doing similar tasks, to identify work related causes of the symptoms, if any and
- b) Take corrective measures to avoid further injuries if the causes of the symptoms are work related.

The Canadian Standards Association (CSA) published a guideline (CAN/CSA-Z412 Guideline on Office Ergonomics) that provides recommended practices for optimizing office designs for human use. This booklet is based on these guidelines and current researched literature.

## 4. Work Related Musculoskeletal Disorders

**WORK-RELATED MUSCULOSKELETAL DISORDERS (WMSDs)** include a variety of conditions including low back pain, tension neck syndrome, shoulder/arm/hand tendinitis (i.e. swelling of the tendons) and carpal tunnel syndrome (i.e. nerve compression in the wrist). Eyestrain is also a condition that is commonly experienced by computer users.

### 4.1 Symptoms and Risk Factors

General symptoms that can be related to WMSDs include:

- pain, tenderness,
- numbness, tingling,
- swelling, redness,
- limited movement, loss of strength

General risk factors for WRMDs are:

- how often and how long one performs computer work,
- forces and postures involved,
- environmental factors

Task Frequency and Duration	Force and Posture	Environment
- highly <u>repetitive</u> movements (e.g. continuous data entry)	- <u>unsupported</u> body postures (e.g. holding the arms away from the body to reach a mouse, lack of lumbar support)	- poor <u>visual</u> environment (e.g. glare on monitor, poor monitor/document placement)
- long periods of <u>static</u> work activity (e.g. long periods of sitting)	- <u>bent</u> postures (e.g. wrist bent upward, downward or to the side) - <u>twisted</u> postures (e.g. head turned to see the monitor)	- annoying or distracting <u>sounds</u> (e.g. noisy equipment, disruptive conversations)
- <u>lack of rest</u> (e.g. working through breaks)	- forceful exertions (e.g. tight mouse grasp, forceful keying) - <u>local pressures</u> (e.g. resting wrist on hard edge of desk)	- uncomfortable <u>thermal</u> environment (e.g. drafts from windows, cool temperatures) - <u>psychosocial</u> environment (e.g. unpleasant work environment, lack of control over work)

More specific to the affected body regions:

**LOW BACK PAIN** may be experienced by employees who perform long periods of sitting with unsupported postures (e.g. lack of lumbar and back support).

**NECK AND SHOULDER COMPLAINTS** may be related to the static muscle activity that is needed to support body parts away from the body (e.g. holding the arms away from the body to reach and use a mouse, bending your neck to cradle a phone on your shoulder). Static muscle activity is a muscle contraction that is held for extended periods of time. When this occurs, blood circulation is reduced to the working muscle and so, the muscle fatigues more rapidly.

Tasks that require workers to use equipment at inappropriate work heights or far away from the body, or under poor viewing conditions, often encourages excessive static muscle activity to support bent and twisted, neck and shoulder postures.

- Symptoms include tenderness, pain and limited movement.

**CARPAL TUNNEL SYNDROME (CTS)** is a condition related to pressure that is put on the nerve that runs through the wrist area. Risk factors include long periods of repetitive and short-cycle tasks such as continuous data entry.

- Symptoms of CTS include tingling and numbness in the fingers, pain, and difficulty with grasping items. Symptoms are often most noticeable during the night.

**EYESTRAIN** may result from visually demanding work (e.g. prolonged and close reading) under poor viewing conditions (e.g. glare on the monitor, inadequately placed documents etc.).

- Symptoms can include blurred vision, red sore eyes, and headaches.

**NOTE:** If you are experiencing work related pain or symptoms they must be reported to your supervisor as soon as possible and documented on the district First Aid Record.

## 5. Workstation Design and Layout

**HUMAN CHARACTERISTICS** The range of human characteristics (physical and mental) should be considered when designing workstations for employee use.

Important human factors can include body shape and size (e.g. lumbar curve, leg length), muscular function (e.g. static muscle loads), tissue tolerance (e.g. disc pressure), visual characteristics (e.g. bifocal viewing) and job satisfaction (e.g. control over workload).

**WORK TASKS** The office tasks that employees perform can vary in terms of their importance to the overall job and the frequency with which it is performed. For example, a data entry clerk may use the number keypad most often during the day, whereas graphics staff may use the mouse more.

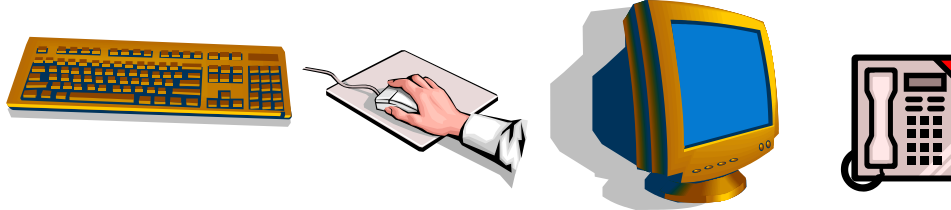
To optimize the office environment for human use, the design and layout of equipment should suit the different needs and preferences of its users, as well as the requirements of the task.



## Office Equipment

In today's office environment, many people operate a keyboard and mouse, view a computer monitor, and rely on a variety of additional equipment (e.g. phone) and supplies (e.g. documents) to perform their jobs.

In general, input and monitoring devices should be operated directly in front of the user and at a work height that allows for natural and relaxed body postures (e.g. avoid having to reach to use the keyboard or mouse).



If support equipment and materials are frequently used, they also should be placed within easy reach or view or easily accessed when needed.

### Guidelines for KEYBOARD use:

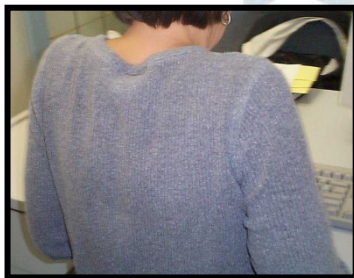
- Place keyboard at a **work height** that allows the user to adopt suitable arm postures for repetitive keying. That is, adopt relaxed shoulder and straight (or neutral) wrist postures.



Keep shoulders relaxed.



Keep wrist neutral (straight line with keyboard)



Avoid raised shoulders.



Avoid bent wrists.

- Place keyboard, so that wrists and hands/fingers float freely over the keyboard while typing (i.e. avoid leaning the wrist on the desk or palm rest to avoid pressure under the wrist and to avoid stretching fingers to reach far away keys).



Hands should float freely over keyboard.



Avoid leaning wrist on desk edge.



Avoid leaning on palm rest while typing.

- For horizontal work surfaces, place the keyboard flat on the desk to promote a neutral wrist posture (i.e. do not raise the legs at the back of the keyboard as this tends to bend the wrist upward).



Place keyboard flat on desk.



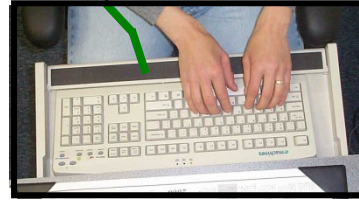
Avoid raising legs up on a flat work surface.

NOTE: If the keyboard is placed on a downward slope (e.g. negative tilt), then the arms should be on a downward slope as well, to keep the wrists in a straight neutral posture.

- Place keyboard, so that the **user is centered** over the keys that are used most often (i.e. not necessarily over the center of the keyboard). Try and keep the elbows in close to the side of the body, and avoid bending the wrists to the side when using the keys or the mouse.



Center over the keys that are used most often.



Avoid bending the wrist to the side.

- Activate keyboard with the fingers slightly curved to reduce wrist pressures.



Fingers slightly curved.

#### Alternative Keyboards

- A split keyboard is one that is divided into 2 sections. Some designs have sloped angles for better wrist and forearm positions. Some evidence exists for reduced pain, however, their use should be carefully evaluated to ensure new discomforts or performance concerns (e.g. errors, slower typing speed) don't arise. For most people a regular keyboard design works just fine if it's positioned properly.



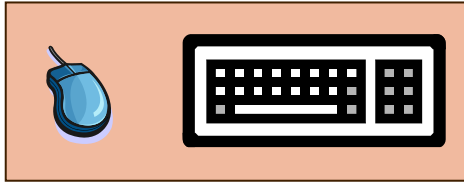
Keyboards are starting to become available without the numeric keypad on the right or with the middle keys moved. These can be desirable features to reduce shoulder strain, by bringing the arm in closer to the body to use the mouse.





### Guidelines for MOUSE use:

- Place the mouse at the same level and as close to the keyboard as possible, so that your shoulder is in a relaxed position and your wrist is not bent (i.e. avoid reaching forward or to the side while using the mouse).



Same level Close to keyboard



Avoid reaching forward.

- 
- The **mouse design** should fit the hand comfortably and should allow either right or left-hand use.
- Operate on a **stable surface** with **enough room** to move the mouse.
- Operate with slightly curved and relaxed fingers, and click gently.



Relaxed and curved fingers.

- Alternate keystroke combinations with mouse activity to provide relief from prolonged mouse use.

### Alternative Mouse Designs

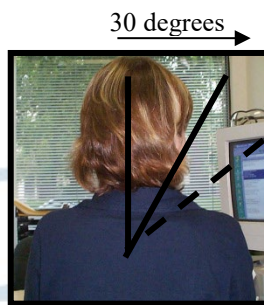
Alternative mouse designs are evolving with the aim of using different muscles and hand positions. There is little evidence to determine which design offers the most benefit. If electronically possible, switching between designs may provide some relief to overused muscles. Similar to alternative keyboards, carefully evaluate any changes to mouse designs.

[Check out the 10 tips for using a computer mouse.](#)



#### Guidelines for MONITOR use:

- Place the monitor **directly in front** of you. If the monitor is less frequently used, the monitor can be placed to the side, but no more than 30 degrees to either side of the body's centre line.



Avoid awkward neck twisting.

- Place the monitor so that the **distance** is comfortable for viewing. This often depends on the user's visual system (e.g. uncorrected vision) and the characteristics of objects being viewed (e.g. large, small).

In general, a close monitor can be visually fatiguing; try positioning the monitor about an arm's length away.



Position monitor about an arm's length away

- Place the monitor at a **height**, so that the top of the monitor's screen is no higher than eye level.



Top of monitor screen not higher than eye level

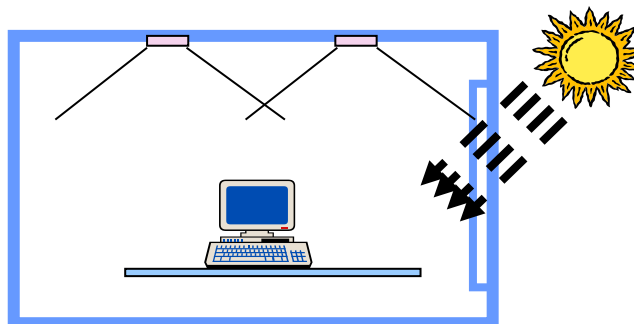
If the monitor is sitting too high on top of the computer, try lowering the monitor by placing the computer's processor on the floor.

For some bifocal lens wearers, a lower monitor placement may improve the visual angle. Otherwise, the person may be tilting their head backward to see through the lower portion of their lenses.



- Keep **eye prescriptions** up to date. Advise your eye practitioner about your computer work activities to ensure lenses are appropriate for computer work.
- Position the monitor to avoid **glare** from overhead lights or windows.

Try positioning the workstation so that light falls to the sides of the work area. Avoid positions that reflect light directly into the eyes (e.g. light source is in front of the user) or indirectly from the monitor (e.g. light source is behind the user).

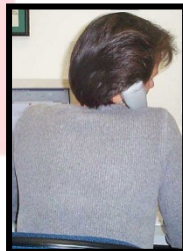


To help reduce glare, try: dimming the lights (if possible), an anti-glare screen, or tilting the monitor downward.

- Adjust the **screen brightness** so that you can see the characters easily, but not too bright, or the characters may start to blur.
- Avoid using more than 4-7 **colours** at one time. Also, avoid extreme colour contrasts (e.g. red and blue) or insufficient colour contrasts (e.g. yellow and white). For characters and small shapes, avoid using blue.

#### **Guidelines for SUPPORT EQUIPMENT and SUPPLIES:**

- In general, **laptops** are not designed for continuous use. If you use a laptop **as your main computer** at the office consider:
  - Using a docking station and plug a regular keyboard and mouse into the ports of your laptop. This will give you more flexibility in terms of set-up.
  - Raise the laptop so the monitor can be viewed without bending the neck (i.e. follow tips for setting up monitor).
- **Telephones that are extensively used in a cradled position, can lead to stressful bent neck postures.**



Avoid bent neck postures.

The use of a headset or speakerphone is a hands-free option to avoid prolonged bent postures. If headsets are used, they should be comfortable to wear, provide good sound quality, and cords should not restrict movement.

If the phone is used often, then it should be located closer to the body, to avoid stressful reaching.

- **Reading from documents can be a visually demanding work activity.**

Ensure that light levels are appropriate for reading tasks (500 – 750 lux is recommended for traditional office tasks vs 300 – 500 lux for computer tasks). Additional task lighting may be necessary for reading and writing tasks.

Documents should be easily read (e.g. larger size for distance viewing, pen vs pencil to improve contrast).

14 Font      12 Font   10 Font

**Document holders** are useful for placing documents at the same height and orientation as the monitor, to avoid bent neck postures and visual fatigue. Use a document holder that can be comfortably seen:

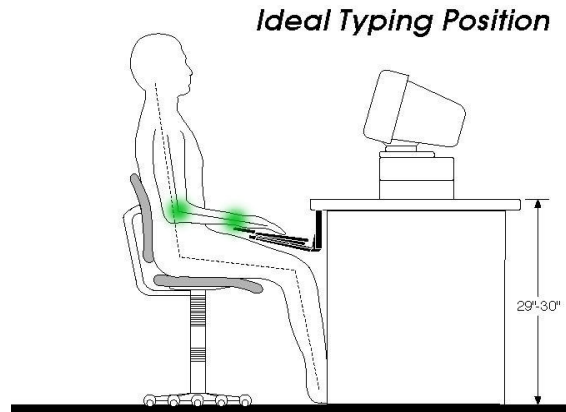
- use an **in-line** document holder that sits between the keyboard/keyboard tray and screen and is aligned with your body midline so that all you have to do is look down to see the documents and raise your eyes to see the screen.
- use a **screen-mounted** document holder and position this to the side of your screen that is your dominant eye
- use a **freestanding** document holder and position this next to the side of the screen and slightly angle it so that it follows a curve from the side of the screen.
- **Wrist rests** are a popular product that is often used with keyboards or mice. To date, research studies have not demonstrated any conclusive benefits with their use. In fact, a wrist rest can actually increase pressure inside the carpal tunnel by compressing the undersurface of the wrist

Where they may be helpful is to prevent the wrist from bending back toward the body (i.e. wrist extension) as the arm tires. Resting the hand, may also reduce some of the pressure on the shoulders and back, which are working to hold the arms in position. Furthermore, it can provide a soft surface for the hands to rest on, as opposed to resting them on a sharp desk edge.

If you chose to use a wrist rest they should only be used to rest the palms during a break in typing. Avoid resting your wrists on them while entering data. This practice can create pressure on the wrists from the direct contact or if you stretch your fingers to reach far away keys.

- A footrest may be needed for those whose feet dangle when they raise their chair. If used, a footrest should be stable, large enough to support both feet, and allow for body movement.
- **Keyboard Trays:** Typing at a keyboard on a conventional articulating keyboard tray can increase postural problems for some users. Working with the keyboard more steeply angled on the tray is a common work posture for many computer users. In this position it is also difficult to maintain the wrist is in a neutral posture, because the forearms sag as they tire and this puts the wrists into greater wrist extension. Studies have failed to show that conventional keyboard trays substantially improve wrist posture. If a keyboard tray is used the ideal typing posture is achieved when the keyboard is below seated elbow height and the keyboard base is gently sloped away from the user so that the key tops are accessible to the hands in a neutral posture. In this position the arms, shoulders, neck and back can relax, especially during brief rest pauses. Also, in this slightly reclined sitting position the low back rests against the lumbar support of the chair, the elbow angle is opened to promote circulation to the lower arm and hand, the abdominal angle, and knee angle is opened to promote blood circulation.





- Where monitor glare cannot be controlled by lighting adjustments nor by alternate workstation layouts, an anti-glare screen be helpful to reduce glare on the monitor.

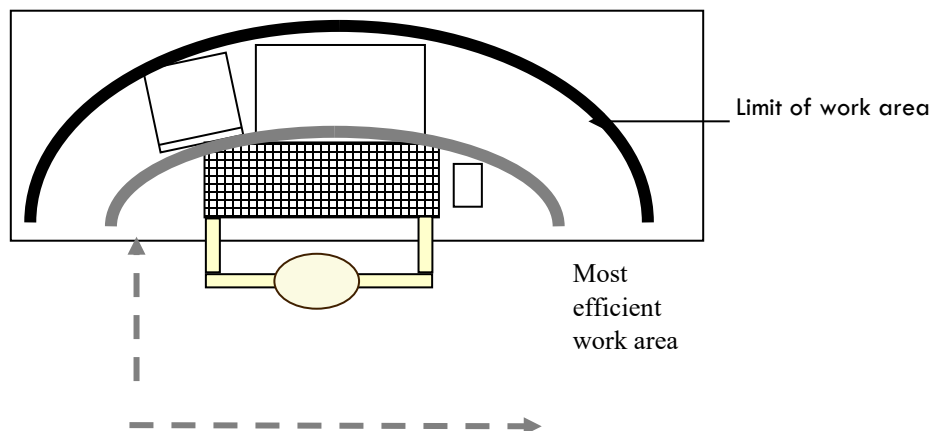
Chose a filter that reduces screen glare but does not degrade the contrast for viewing characters. Ensure to keep the screen clean.

You may need to increase the monitor brightness, if the monitor's screen is darkened after installing the anti-glare screen.

- Electrical Equipment should have proper connections, and have cords and cables that are long enough to allow flexibility in placement.

**Guidelines for LAYOUT:**

Consider the equipment and materials that are routinely used and position them so that the most important and frequently used items are **within easy reach**.



# Office Furniture

In general, furniture should be stable, safe, comfortable and easy to operate.

If a workstation is shared by more than one employee, the design and arrangement should consider the range of users (e.g. persons with bifocals may require a different monitor height, workers with different leg lengths may require different seat depths).

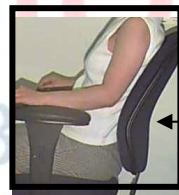
With intensive use, ease of adjustments and product durability become more important.

## Guidelines for CHAIRS:

Chairs should fit and support your body, and have basic adjustment features to accommodate different users, postures, equipment and tasks.



- **Lumbar support** should be provided in the backrest and fit your body to maintain the natural lumbar curve of your spine.



Lumbar Curve

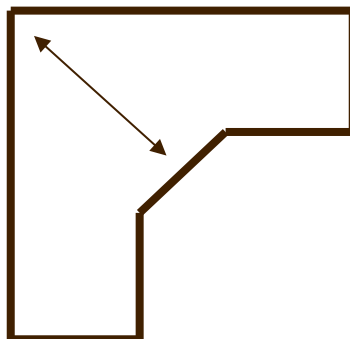
- During the workday, **adjust** and **recline** the backrest to transfer the load on the back to the backrest.
- Adjust the **seat height** to the desired work height (e.g. keyboard slightly below elbow height). If your feet dangle, provide a footrest to prevent pressure under your legs.
- The **seat pan** should be deep enough to support the legs. If the seat depth is too deep, the user may experience pressure behind the knees or it may cause the user to move forward on the chair and not use the backrest.
- Adjust the **armrests** (e.g. up/down, in/out) to support the forearm. Allow the arms to hang naturally down the side of the body.

If the armrests interfere with movement or prevent you from getting close to the task, move them out of the way, or remove them altogether.

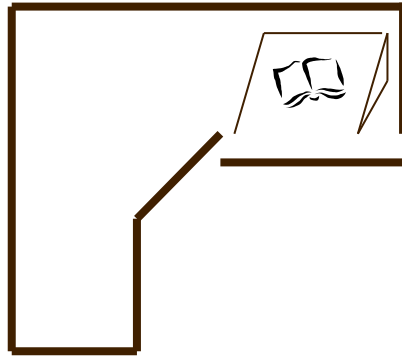
- Adjustable features should be easy to operate from a seated position. **Adjust your chair throughout the workday** to improve task performance and to allow changes in body posture.
- A 5-base of support provides **stability** and can prevent tipping.
- **Wheels** should be appropriate for the flooring (e.g. hard castors for soft floor surfaces and vice versa). You should be able to move around, and get in and out of the chair, easily.
- Chairs should be in **good repair** and be removed from service promptly when broken.
- For tips and an evaluation form for selecting a proper ergonomic chair <http://ergo.human.cornell.edu/AHTutorials/chaich.html>

#### **Guidelines for WORKSURFACES:**

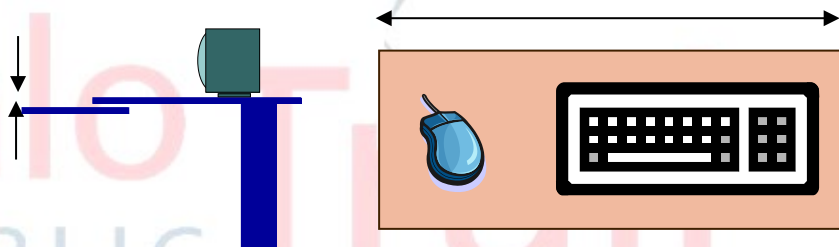
- There should be sufficient **space** on top of the work surface (e.g. deep enough and wide enough) to support the equipment and materials that are needed to perform work tasks (e.g. computer work, writing, and reading).
- Corner work surfaces allow more depth for placing the monitor at the user's desired distance, and more space for writing and other tasks.



- A desk surface that **adjusts up and down** can help the worker maintain neutral body postures (e.g. wrists not bent up or down, shoulders not raised, neck not bent).
- A desk with a surface that **tilts** can help the worker view documents at a better angle.



- If a separate keyboard work surface or **keyboard tray** is used, it should:
  - be stable and hold the adjustments made
  - be **wide enough** to accommodate keyboard and pointing devices (about 26 inches), and
  - not interfere with the user's legs (maximum work surface depth is about 1 inch)



- Adjust the keyboard tray **height** so that the keyboard is slightly below elbow height. This will help to relax the neck, shoulders and arm muscles.
- Adjust the tray **angle** so that the keyboard is horizontal or sloped slightly downward. A tray that is sloped upward can lead an extended wrist posture (i.e. the back of the hand is bent toward the body).
- There should be sufficient **space beneath** the work surface for adequate knee and foot clearance, and side to side movement. Awkward postures from reaching and twisting can be experienced at workstations with inadequate clearance.
- **Sharp edges** on the desk should be avoided since they can create pressure points on the wrist and arm.

### Guidelines for STORAGE:

- Storing items on shelves should consider the characteristics of the objects being stored (e.g. heavy, large), their importance to the task, and the frequency of handling and reaching.

**Frequently used** or important books or materials should be stored within easy reach. Other items should be located away from the main work area or off the desk entirely.

**Large, heavy** items should be within easy reach. Binders, for example, or can be re-organized into smaller binders or folders to reduce the physical load of handling.

- Overhead storage should not limit the positioning of the computer monitor, and should provide adequate head clearance.

## Office Environment

### Guidelines for THERMAL ENVIRONMENTS and AIR QUALITY:

Thermal and air quality factors are known to influence the psychological well-being of office workers, and their performance.

**Thermal comfort** is determined by a variety of factors including temperature (e.g. too hot, too cold), humidity, air movement (e.g. drafts), radiant heat, activity, and clothing.

**Air quality** is often related to heating, ventilating and air-conditioning systems, as well as to the presence of irritants (e.g. dust particles, carbon dioxide) in the work environment.

- Ensure the work environment provides an adequate supply of fresh air, and that heating or cooling systems allow workers to perform their job comfortably.
- Avoid locating workstations near heating elements or air diffusers, as this may interfere with air movement.
- Layered clothing can help workers adjust to changes in thermal conditions.



### Guidelines for NOISE:

Noise levels in typical offices are normally below the legal limits that protect against hearing loss. Still, noise can be a source of annoyance and distraction, and these in turn can lead to tensed muscles, fatigue and reduced performance.

- Ensure adequate **privacy** is provided for confidential or sensitive conversations.
- Ensure **distractions** are kept to a minimum for those that need to concentrate (e.g. avoid group conversations near the reception area or where people are trying to work).
- Consider **acoustical treatments** (e.g. soft floor surfaces, screens) to absorb disruptive noise.

### Guidelines for JOB DESIGN and WORK METHODS:

Jobs that incorporate elements of good job design (e.g. job control, meaningful work, and training) can relieve the physical and psychological stresses of the job and greatly improve job satisfaction. How we organize our tasks throughout the day can also reduce fatigue and monotony.

Some practical suggestions to consider include:

- **Learn why and how to adjust your chair and workstation**, to optimize your work area and to avoid long periods of stressful body postures.
- **Change postures and job tasks frequently** to reduce monotony, muscular fatigue, and the physical loading on body structures. For example:
  - the load on spine is less in a standing posture vs. sitting posture
  - to avoid extensive one-handed mouse activity, try using keystroke combinations to spread the load to the other hand or learn how to use a mouse with your non-dominant hand
- **Adjust the pace of work.**
  - Spread your work to avoid long periods of intensive keying.
  - Take micro pauses (e.g. short breaks) during intensive work activities (e.g. rest your hands; focus on an object in the distance).

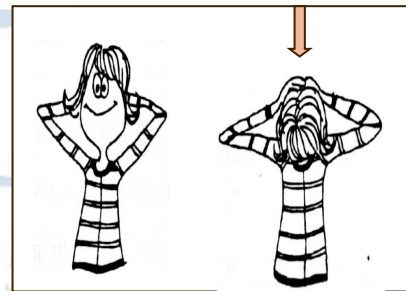
# Body Stretches

The principle behind body stretches in the office environment is to stretch those muscles that are being held for long periods of time during computer work.

- Exercises that is easy to perform and do not require a lot of space or time, seem to work best.
- Exercises should be matched to an individual's state of health.
- Exercises should not reproduce the physical stress of computer work, introduce safety hazards, or place additional loads on body structures.
- All exercises should be done gently, slowly and smoothly. Hold each position for four complete deep breaths, stretching a little further with each breath.

## Neck Forward Bend

- Place your hands behind your head.
- While keeping your back and shoulder as straight as possible, gradually bend the head forward to stretch out the upper part of the neck.
- Roll your head to one side, then the other, four times.



## Neck Side Bend

- Grab the bottom of your seat with one hand.
- With the other hand, place your palm above the opposite ear and pull your head to the side.
- Repeat to the other side.



## Neck Rotation

- Balance your head with shoulders dropped and arms folded behind your back.
- Turn your head to one side, as far as it will go. Nod four times.
- Repeat to the other side.

### **Backward Shoulder Stretch**

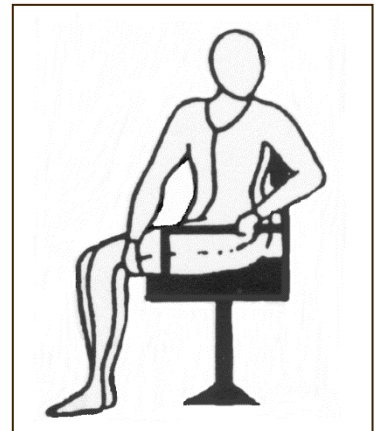
- Grab your hands behind your back.
- Reach out backwards, while expanding your chest, arching your back, and lifting hands.

### **Tall Stretch**

- In a sitting or standing position, interlock fingers.
- With palms up, stretch arms above head until they are straight.
- Do not arch the back.

### **Trunk Twist**

- Place the right hand against the outside of the left knee.
- Place the left hand on the right hip or chair.
- Turn the head, neck and shoulders to the left. Hold for four breaths.
- Repeat to the other side.



## Relieving the eyes

- Take a few seconds to rest your eyes by looking away from the computer monitor.
- Take time to blink during long periods of visual work.

**Before each of the following wrist exercises, shake the hands vigorously.**

### Wrist Extensor Stretch

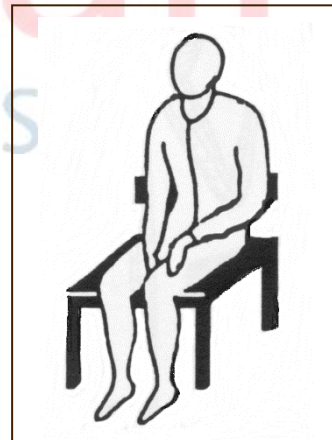
- Raise your right hand in front of your face and turn it so the palm faces away from you.
- Place your left hand on the back of your right hand and gently bend your right wrist, straightening the elbow as you do so.
- Repeat with other hand.

### Wrist Flexor Stretch

- Place the palms of the hands together as if praying, and raise elbows.
- Separate palms so that only the fingertips are pressing together.

### Relax

- Sit comfortably, hands crossed in your lap.
- Breathe slowly and deeply.



# Workstation Checklist

This checklist can be used to determine if musculoskeletal injury risk factors are present in your work area. Tips are provided to help reduce these risk factors.

Posture Risk Factors	Present ✓	Try...
Neck bent while reading documents		<ul style="list-style-type: none"> <li>Using a document stand.</li> </ul>
Neck bent forward while viewing monitor		<ul style="list-style-type: none"> <li>A larger font size.</li> <li>Moving the monitor in closer.</li> <li>Raising the monitor if too low.</li> </ul>
Neck bent backward while reading monitor through bifocals		<ul style="list-style-type: none"> <li>Lowering the monitor</li> <li>Other glasses (talk to eye practitioner)</li> </ul>
Neck twisted to the side		<ul style="list-style-type: none"> <li>Move the monitor/ documents in front</li> </ul>
Neck bent to the side while cradling the phone		<ul style="list-style-type: none"> <li>Holding the receiver with hand</li> <li>Using speaker phone option</li> <li>Using a headset</li> </ul>
Leaning forward on chair		<ul style="list-style-type: none"> <li>A footrest, if chair adjustment is high</li> <li>Another chair if seat depth is too long</li> </ul>
Feet dangling while using chair		<ul style="list-style-type: none"> <li>Lowering work surface, if possible</li> <li>A foot rest</li> </ul>
Lumbar curve not supported		<ul style="list-style-type: none"> <li>Adjusting lumbar pad/ backrest height to fit the lumbar curve</li> </ul>
Twisted trunk postures		<ul style="list-style-type: none"> <li>Removing obstructions underneath desk</li> <li>Arranging items to reduce awkward reaches</li> </ul>
Shoulders are raised		<ul style="list-style-type: none"> <li>Lowering the work surface if too high</li> <li>Raising the chair</li> </ul>
Arm reaches to use the mouse		<ul style="list-style-type: none"> <li>Placing keyboard and mouse on same work surface</li> </ul>
Wrists bent back towards body (e.g. extension)		<ul style="list-style-type: none"> <li>Lowering keyboard/ mouse surface</li> <li>Lowering legs on keyboard</li> <li>Raising chair</li> <li>Using palm rest during typing/ mouse breaks</li> </ul>
Wrists bent to the side (e.g. deviation)		<ul style="list-style-type: none"> <li>Bring mouse in closer to keyboard</li> <li>Center body over keys used</li> <li>A split keyboard (N.B evaluate)</li> </ul>



Posture Risk Factors	Present ✓	Try...
Eye fatigue		<ul style="list-style-type: none"> <li>• Moving the monitor to arm's length away</li> <li>• Adjusting monitor to reduce glare</li> <li>• Covering windows to reduce glare</li> <li>• Anti-glare filter</li> <li>• Assessing light levels</li> </ul>
Body is tense		<ul style="list-style-type: none"> <li>• Reducing noisy distractions</li> <li>• Improving social interactions at work</li> <li>• Adjusting work schedule/ workload/ pace</li> <li>• Assessing thermal comfort</li> </ul>

Force Risk Factors	Present ✓	Try...
Wrist leans on hard edge of desk		<ul style="list-style-type: none"> <li>• Using a palm rest</li> </ul>
Chair seat digs behind knees		<ul style="list-style-type: none"> <li>• Using chair with smaller seat pan</li> </ul>
Lifting heavy items		<ul style="list-style-type: none"> <li>• Using dollies/ carts</li> <li>• Pushing vs. lifting and carrying</li> <li>• Reducing the size and/or weight of load</li> <li>• Rotating heavy and light tasks</li> <li>• Not to reach or twist while lifting</li> </ul>
Forceful keying		<ul style="list-style-type: none"> <li>• Relaxing your typing effort</li> </ul>
Grasping mouse tightly		<ul style="list-style-type: none"> <li>• Relaxing your grip</li> <li>• Reducing mouse speed for more control</li> </ul>

Exposure Risk Factors	Present ✓	Try...
Long periods of repetitive keying or mouse operation		<ul style="list-style-type: none"> <li>• Alternating with non-repetitive tasks</li> <li>• Keystroking combinations to reduce repetitive mouse use</li> <li>• Alternate between right and left hands to reduce repetitive mouse use</li> <li>• Stretching/ taking micro breaks throughout the work day</li> </ul>
Long periods of sitting		<ul style="list-style-type: none"> <li>• Alternating your work tasks</li> </ul>

		<ul style="list-style-type: none"> <li>Periodically standing or walking around</li> <li>Adjusting your chair to change sitting posture</li> </ul>
Performing work for long periods of time with arms unsupported		<ul style="list-style-type: none"> <li>Using your chair armrests to rest your arms</li> <li>Resting your arms on the desk</li> <li>Resting your hands on your lap</li> <li>Resting your palms on a palm rest during typing breaks</li> </ul>

## Additional Information

### ADDITIONAL INFORMATION AND RESOURCES

- Alberta Occupational Health and Safety Act, Regulation and Code.
- [Canadian Standards Association \(2000\). CAN/CSA – Z412 Guideline for Office Ergonomics. A National Standard of Canada. Rexdale, Ontario.](#)
- Occupational Health and Safety
- Office Ergonomics : Employee Self Assessment Checklist
- Check out the following link for quick guidelines to improve the ergonomic design of your computer workstation. You will find concise and clear information, supported by plenty of pictures. If you are experiencing pain or discomfort it also provides some possible solutions. <http://ergo.human.cornell.edu/ErgoTips2002/home.html>.
- Excellent ergonomic resources from Cornell University such as how to select a proper chair, keyboard and mouse are located at <http://ergo.human.cornell.edu/>.

### Office Ergonomics – Employee Self-Assessment Checklist

Please read the “**Ergonomic Guidelines for Office Workstations**” before using this checklist. The more yes checkmarks the better! If you have answered **No** to any of these questions try adjusting your workstation or equipment so you are able to answer **Yes**.

<b>Check your posture/body position (In the seated position)</b>	<b>Y/N</b>
Your shoulders are relaxed (not shrugged) with arms and elbows close to your body to avoid reaching for the mouse. Armrests do not interfere with this position.	
Your wrists, hands and forearms are in a straight line (neutral) position (e.g. flat and not bent up/down or angled).	
With your buttocks against the chair's backrest, you are in a slightly reclined position (100-110°) and your lower back (lumbar curve) is supported by the curved part of the backrest.	
Sitting back in your chair against the back support, your thighs rest horizontally with knees bent at about right angles (60-90°) legs not tucked under or wrapped around the chair.	
Looking at your screen, your head and neck is in an upright position facing the monitor (i.e. not tilted or bent forward or back).	
The angle of your elbows is at or slightly greater than 90 degrees and upper arms/elbows are relaxed and close to body as possible.	
Your legs are horizontal with the floor and your feet can rest flat on the floor or are supported by a footrest.	
If you use a footrest, does it adjust at an angle of 10-20 degrees and have non-slip surface?	
<b>Check your chair</b>	<b>Y/N</b>
Your chair has adjustable seat pan, backrest, tilt and height and you can easily adjust your chair from a sitting position.	
You can adjust the height of your chair to achieve a comfortable posture for typing. (e.g. shoulders relaxed and elbows at or slightly greater than 90° angle)	
Sitting fully back in the chair you can fit at least 2 fingers (and no more than a fist) between the backs of your knees and front edge of the chair.	
Armrests (if present) are padded and adjustable and do not have interfere with the desktop typing or achieving the correct posture (e.g. allows arms/elbows to get close to the body)	
The chair's seat pan has rounded front edge and does not press into the backs of the between backs of knees.	
Chair swivels and has five legs with castors.	
A chair mat is provided if the floor area is carpeted.	
<b>Check monitor, keyboard and mouse position</b>	<b>Y/N</b>
Sitting comfortably back in your chair the distance of the monitor is approximately one arm's length away.	
You have a good quality computer screen. Text is sharp and brightness, contrast and font size are adjusted to minimize eyestrain and poor posture.	
Your monitor is centered directly in front of you (not angled to the left or right) to prevent head rotation.	
Your screen is clean and positioned so it's free of glare from windows or lights.	
Your monitor is at a comfortable height. E.g. Head should not tilt up or neck bent down to see it and eyes are in line with the screen at about 2-3" below the top of the monitor casing. <b>Note:</b> bifocal or progressive lens wearers may need a lower monitor height.	
For text entry, the alphanumeric part of your keyboard is centered in front of you. (E.g. "B" key is midline to user).	

Mouse and keyboard are next to each other at the same height or level to avoid reaching.	
If a keyboard tray is used, the angle of your keyboard tray allows you to keep your wrists straight, relaxed and not bent.	
You know how to adjust your monitor, mouse speed, and keyboard tray (if used).	

<b>Check your workstation design and layout</b>	<b>Y/N</b>
Work surface is large enough to support office equipment, documents, telephone, etc. and proper computer positioning.	
Frequently used items are placed easily within reach and infrequently used items are stored away.	
Thighs fit comfortably under the desk top or keyboard tray.	
You have enough leg room to allow changes in position (e.g. no obstructions under desk).	
Your workstation is stable with no sharp edges, cracks, gaps or damage.	
Your documents are placed in a position that allows you to keep your head upright to minimize twisting or bending.	
You use a document holder (e.g. angle board placed between keyboard and monitor) or one that is positioned next to the side of the screen.	
<b>Check your conditions and work habits</b>	<b>Y/N</b>
You take at least 1-2 minute mini-breaks from your desk to perform different work types or work task or exercises for every hour of sitting.	
You avoid resting your wrists and forearms on the armrests while typing or using mouse.	
You stand to reach heavy items that are further away or located above you.	
You have your eyesight periodically checked by a qualified professional.	
You have adequate lighting and workstation is free of drafts from ventilation or windows.	
You sit in an upright or slightly reclined position, maintaining a slight curve in the lower back.	
Your head/neck are directly over your shoulders, with shoulders square to your monitor (e.g. you avoid leaning forward).	
You use a headset if using the telephone frequently or avoid cradling the phone between your shoulder and ear.	
You type with hands closely skimming over the keyboard using a light touch on the keys and use a relaxed grip on the mouse.	

*If you are currently experiencing pain, have lost time from work or are seeking medical attention related to computer work please notify your supervisor and complete a district **Work Related Incident Report**.*

*Fax the completed record to Central Services. A district OHS will contact you to review and if necessary arrange for a follow up assessment.*